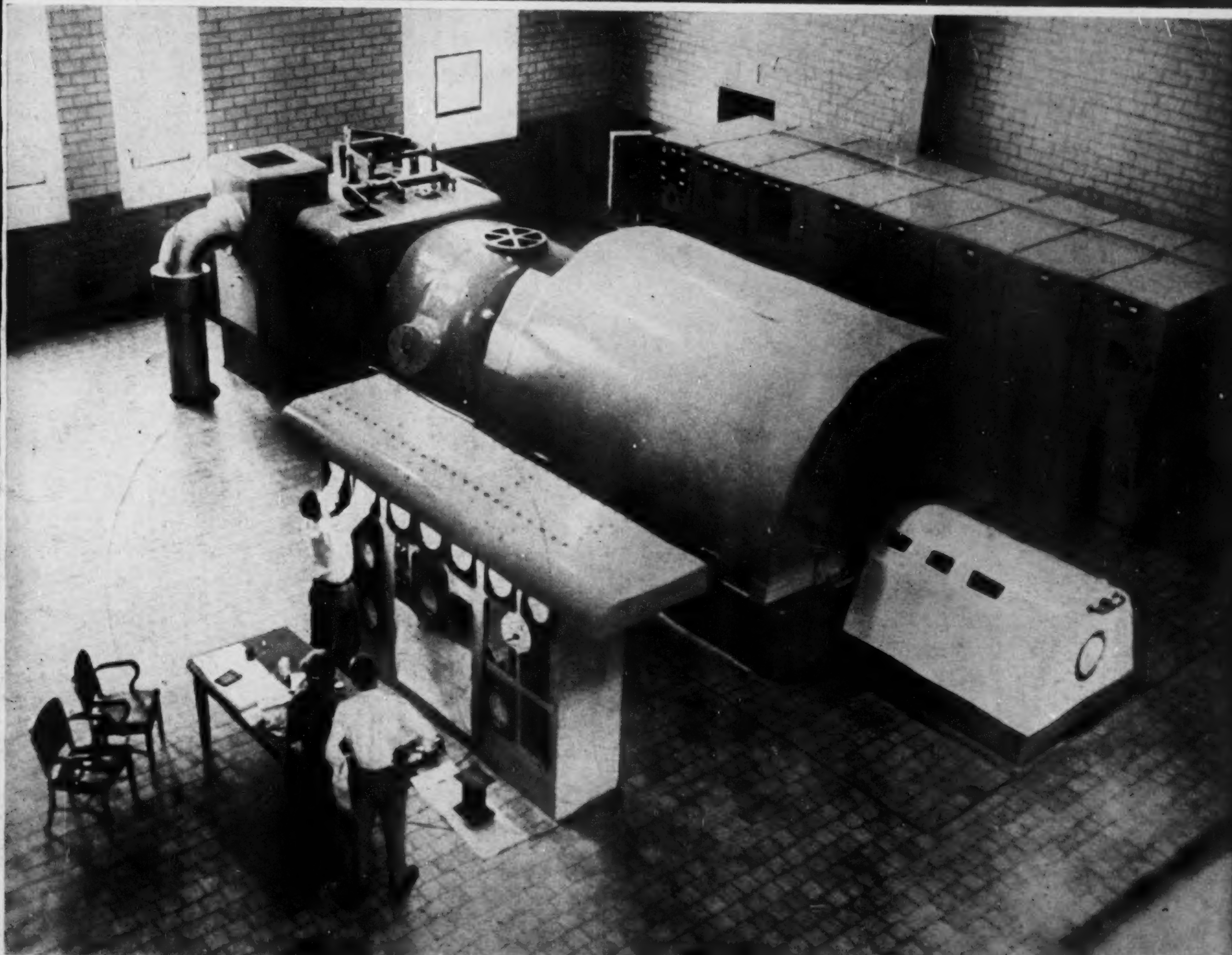
THE PRODUCTION AND MANAGEMENT JOURNAL OF THE NORTH AMERICAN PULP AND PAPER INDUSTRY

PULP & PAPER

AUGUST 1952 VOL. 26 NO. 9



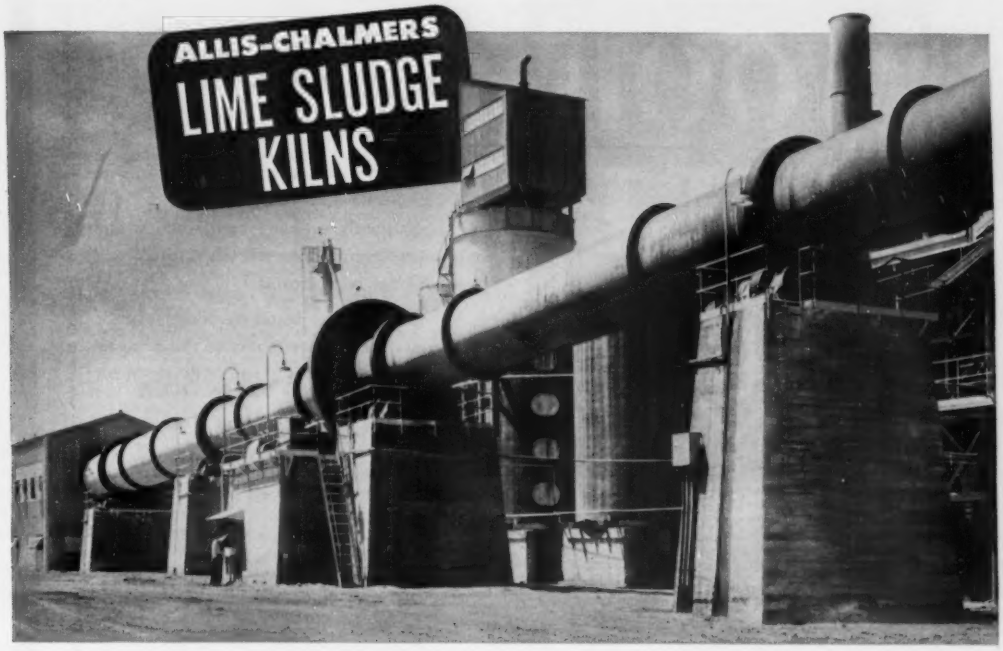
[illegible] Forest [illegible] Rhinelander mill, took [illegible] industrial [illegible] new [illegible] room of Rhinelander Paper [illegible]. Power at Rhinelander [illegible] voltage than anywhere else [illegible] of improvements in [illegible]

3 Big Advantages

1. Heat recuperation chain system adds heating surface . . . cuts dust loss . . . results in lower fuel consumption!

2. Two-diameter design with smaller feed end lengthens preheating zone . . . increases retention time . . . cuts fuel costs!

3. Enlarged firing zone provides greater internal volume for fuel combustion . . . plus greater heat transfer area!



USERS EVERYWHERE report low processing costs with these new Allis-Chalmers lime sludge kilns. These higher efficiencies are a direct result of constant improvements in rotary kiln design, but they tell only a part of the story of the new, modern Allis-Chalmers rotary kilns. For example, the new 20-degree involute spur gear drive gives even distribution of force from pinion to gear . . . contributes to smooth operation . . . long life.

AUXILIARY EQUIPMENT — Allis-Chalmers also supplies feeders, slakers, burning equipment, dust collectors and fans, and master control panel equipment as well as motors and complete drive equipment.

GET THE COMPLETE STORY — See your A-C representative . . . he will put you in touch with our specialized engineering service. For general kiln information request Bulletin 07B6368. For engineering information on lime recovery request Bulletin 07R7010. Allis-Chalmers, Milwaukee 1, Wis.

A-3684

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MOTORS


STREAMBARKER


TEXROPE V-BELT DRIVES


VIBRATING SCREENS


HI-DENSITY FEEDER


ROTARY KILNS

ALLIS-CHALMERS

AND OTHER EQUIPMENT FOR PAPER MAKING . . .

A MILLER FREEMAN PUBLICATION

PULP & PAPER
"The Cellulose Age"
PRODUCTION AND MANAGEMENT JOURNAL OF THE NORTH AMERICAN PULP AND PAPER INDUSTRY

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A Force in Forestry

"No Conservationist group anywhere in the land has a more profound respect for forests and forestry than companies like International Paper.

"I believe we should keep reminding you (the stockholders) of our interest in forestry for several reasons. You ought to know that we are thoroughly aware of the importance of insuring large annual cellulose crops in an Age of Cellulose.

"But there is another, more important reason. Major changes in the way we in America think about our forests may be needed in the years ahead. You as shareholders may need to help bring about a broader understanding of forest management—in the public interest and in your own interests.

"I think it is important for you to keep in mind that *the pulp and paper industry has become a strong constructive force in forestry.*"—*Statement by John H. Hinman, president of International Paper Co.*

BROOMSTRAW

By F. E. Schiller*

Little piece of broomstraw, lying on the floor,
Innocent sprig of broomstraw, that and nothing more.
Will somebody pick you up to make the place look neater,
Or will you soon be swimming in a nice, broke beater?
Handsome supercalender, traveling sixteen-twenty,
Have you seen a broomstraw? You say that you've seen plenty!
Crash! Bam! Crush! Wham! Your cotton rolls are battered.
Hardy piece of broomstraw, just a little tattered.
Oh, you tired millwrights, Are you all in bed?
You had better kiss your sleep good night and go to work instead.
Your foreman is on the telephone. Can't you hear it ringing?
Do not raise your voice so loud. This is no time for singing.
Oh, you patient printers, waiting for your paper,
It was slightly overdue, now it will be later.
No, we did'nt run out of wood. Yes, we know you're sore.
It was just a piece of broomstraw—that, and nothing more.

* F. E. Schiller, the author of this poetical editorial on good housekeeping in a mill is a resident of Rumford, Maine, a famous New England paper town where Oxford Paper Co. makes supercalendered and coated book paper. Mr. Schiller commented in an accompanying letter, that good housekeeping is a subject "that can't be brought up too frequently" as poor housekeeping costs the industry "millions of dollars each year." After working 20 years on wide supercalenders, Mr. Schiller said he knows how much damage broomstraws, fibers, brush hair, human hair, rope fibers, etc., can do.

PULP & PAPER circulates all over the world. *It is read in virtually every pulp and paper company office and mill throughout the United States, Canada, Mexico, Alaska, Hawaii, the Philippines, Australia and New Zealand. It is read in many other offices and mills in Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Uruguay, Venezuela, England, Ireland, Scotland, Sweden, Norway, Finland, France, Germany, Austria, Belgium, Holland, Czechoslovakia, Italy, Spain, Switzerland, Soviet Russia, Poland, Yugoslavia, India, Pakistan, Israel, South Africa, China, Japan, Formosa, both near and far around the world, where pulp and paper are made.*

Competition and the Paper Industry

"Competition is the life of the industry. Competition among mills forces improvement of qualities at reasonable prices. Competition among our customers requires advertising and sales promotion, attractive and efficient packaging of their products. Without the paper mill, the modern super market would be impossible. Yes, competition is the very life of the paper industry."—Sydney Ferguson, president of American Paper & Pulp Assn., and chairman of The Mead Corp.

Paper Companies in Oil Business

In the South the pulp and paper companies are also in the oil business! It all adds up to more strength and stability for this industry.

St. Regis in Florida isn't the only company to find oil and gas on its lands. Gaylord's annual report tells how the first oil and gas was found and produced last year on its properties in Washington Parish, Louisiana, where the company owns "in excess of 120,000 full interest mineral acres." Also, oil was found in Livingston Parish where Gaylord owns "some 115,000 net mineral acres." It also has an interest in wells on two Mississippi properties. The company is exploring these potentialities.

"A PAPER MILL IS NO BETTER THAN ITS WOOD PILE."—Reuben B. Robertson Sr., Chairman, Champion Paper & Fibre Co.

IN THIS ISSUE:

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tinctorial strength...
BISMARCK BROWN
RX CONC. DUSTLESS
TDR EX. CONC.
Tinctorially among the strongest basic colors, the BISMARCK BROWNS produce browns and tans, and act as a dulling agent for the brighter Acid, Basic and Direct colors in sized and unsized papers. BISMARCK BROWN RX CONC. DUSTLESS produces a reddish shade, while BISMARCK BROWN TDR EX. CONC. is somewhat yellower in shade.
For coloring kraft, poster, tissue, wrapping and boxboard, specify Calco's BISMARCK BROWNS. Your Calco representative will gladly give you full information about these and other colors in the complete Calco line.
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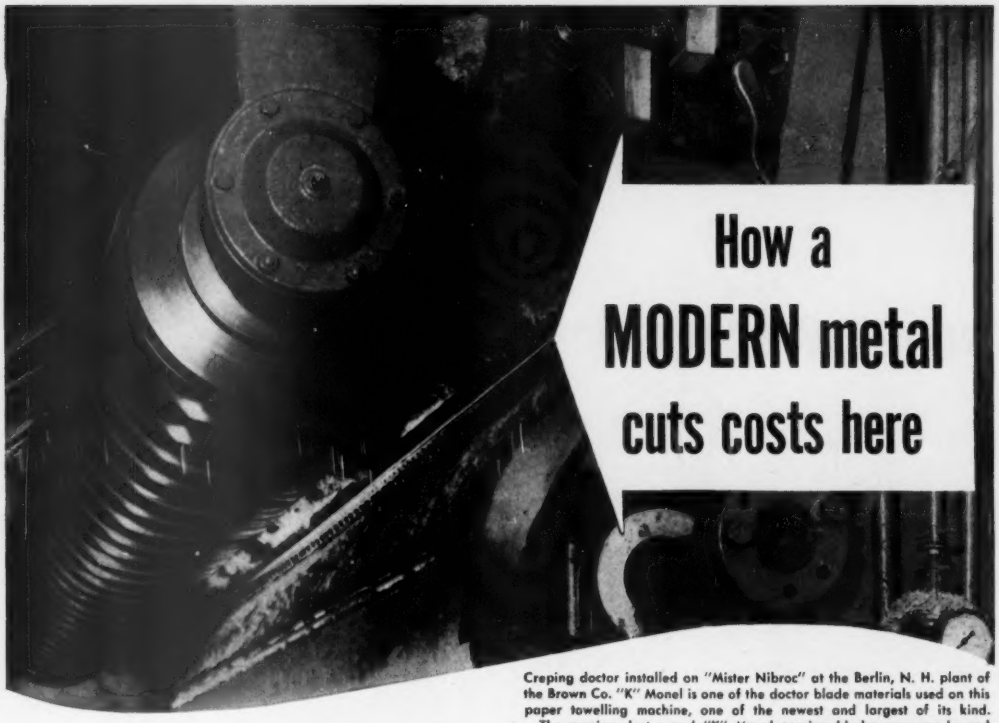

How a MODERN metal cuts costs here

Creping doctor installed on "Mister Nibroc" at the Berlin, N. H. plant of the Brown Co. "K" Monel is one of the doctor blade materials used on this paper towelling machine, one of the newest and largest of its kind. The creping doctor and "K" Monel creping blades were made and furnished by LODDING ENGINEERING CORP., Worcester, Mass.

Wear and corrosion...worst enemies of your doctor blades . . . *can* be controlled.

The secret of long-lasting, low-maintenance blades lies in using a metal that fits your operating conditions.

"K"* Monel is just such a metal. Consider its unique combination of desirable properties:

- **Non-rusting, highly corrosion-resistant.**
- **Strength and hardness greater than structural steel.**
- **Heat-treatable for maximum properties.**
- **Easy to machine; takes a high polish.**

So much for theory. Now . . . what about practice?

Many of the nation's busiest board and paper mills report outstanding service from "K" Monel doctor blades, in both dry and wet end applications.

"K" Monel blades, operating on modern high-speed paper machines, have given up to *18 times* longer service than blades of other commonly used metals. Less honing and less regrinding are required. Corrosion ceases to be a threat to blade life. Maintenance costs drop sharply.

Right now, diversion to America's defense program has limited the supply of "K" Monel for civilian use.

Ask your nearest source of supply about the current availability of "K" Monel, or for more detailed technical information.

* Reg. U. S. Pat. Off.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.

EMBLEM OF SERVICE INCO TRADE MARK

"K"* MONEL...FOR MINIMUM MAINTENANCE

NO PAMPERING REQUIRED

Pacific-Western Reducers are SERVICE-RATED

Service-Rating means that skilled Pacific-Western application engineers carefully assist you in selecting the *right* reducer for the job you want done. The rating of the reducer will meet your service requirements with an adequate margin of safety. No pampering required.

During the past fifty years, we have constantly broadened our line of standard speed reducers as we gained the highly specialized knowledge required to meet industrial applications fully. The odds are that there is a standard Pacific-Western reducer *just right* for your needs. This means that you will save both time and money when you consult us on your requirements. Careful study of each application means that a service-rated Pacific-Western reducer will never fail to give a good account of itself.

A phone call or letter to our nearest plant or office will place a Pacific-Western application engineer at your service.

5231

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ASTEN

dryer felts

thrive on heat

Because they have all asbestos yarn in both directions on the sheet side, ASTENS feel right at home where the dryers are hottest. That's why they last longer and cut tonnage costs.

Economy in the long run

ASTEN-HILL MFG. CO.
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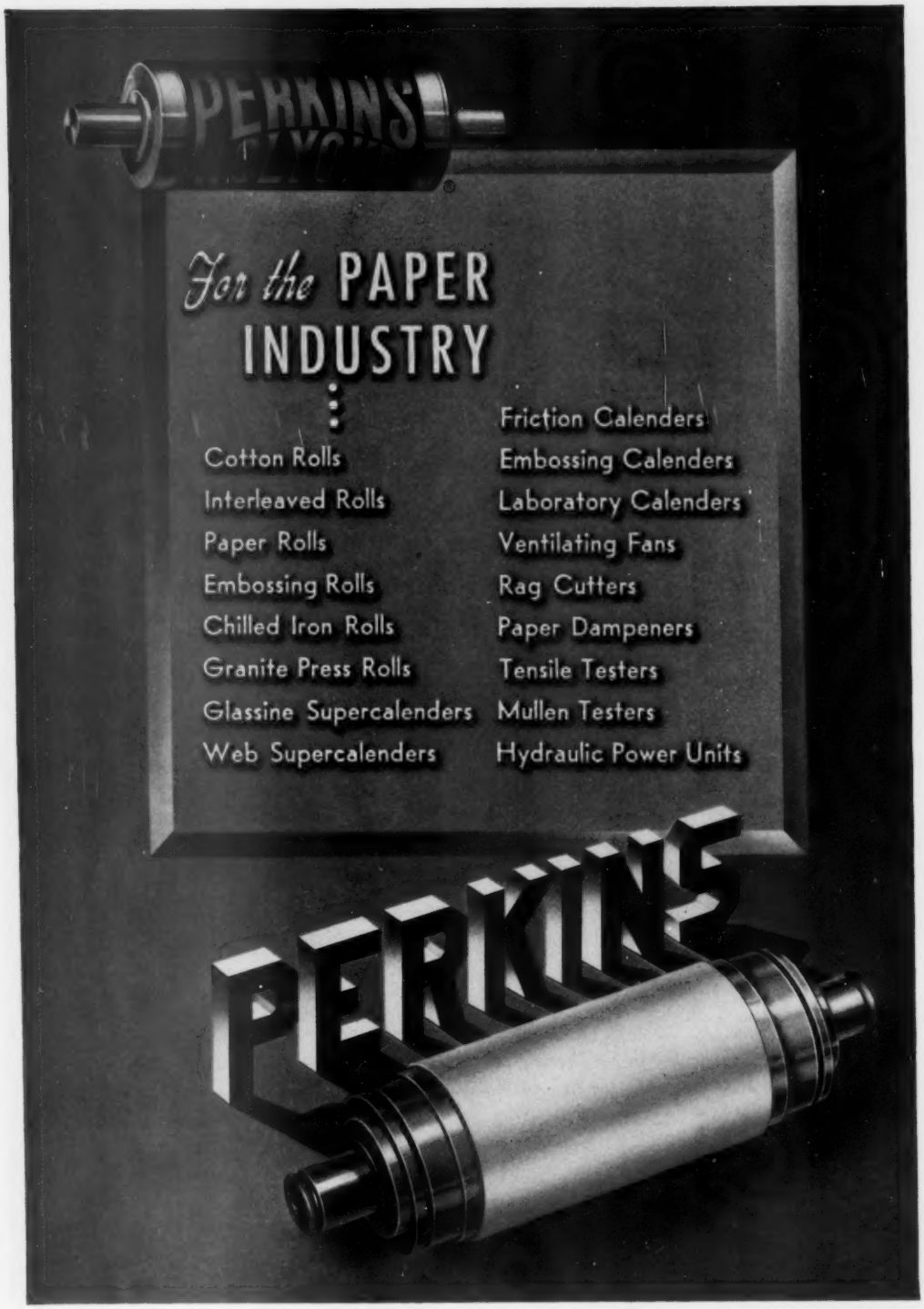
PERKINS
For the PAPER INDUSTRY
Cotton Rolls
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Glassine Supercalenders
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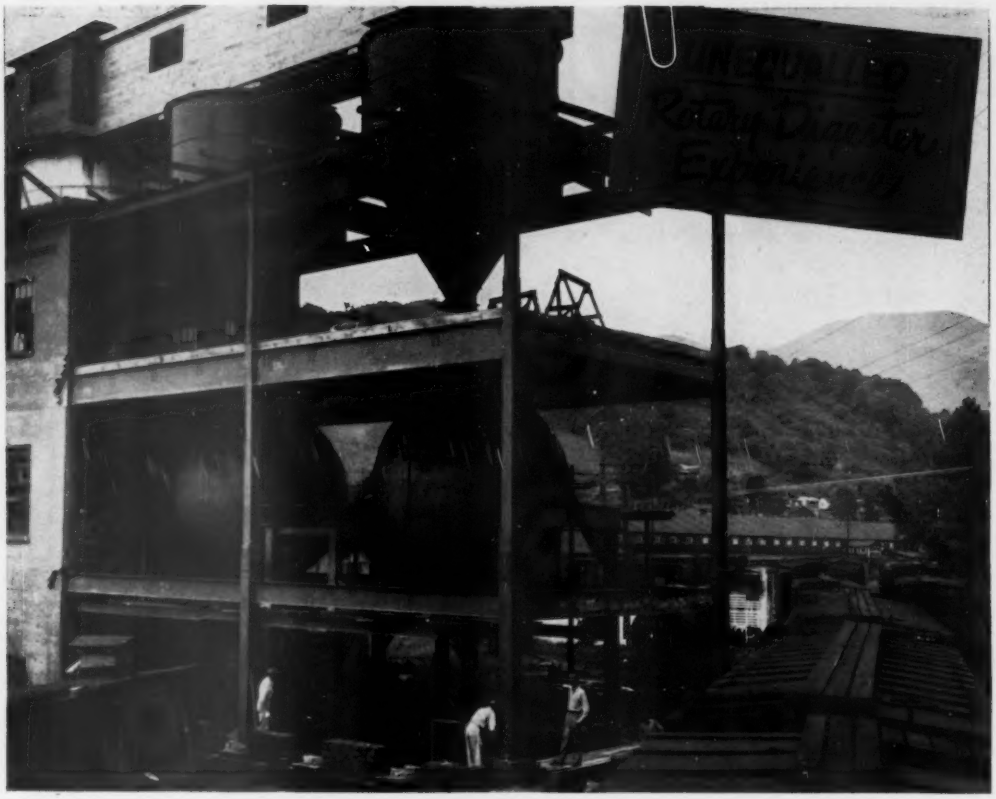
PERKINS



ANOTHER LEADER CHOOSES BIGGS DIGESTERS

Here at the Sylva, N. C., Division of The Mead Corporation they've been using Biggs Rotary Globe Digesters for a quarter-century. During that time they've installed 10 Biggs Digesters at Sylva. Six of the digesters are of 14 feet; the remaining four have 15 foot diameters, and produce an average cook of six and a quarter tons. Mead reports "very little maintenance required" on our Biggs equipment.

Biggs digesters are exceptionally well suited to the popular semi-chemical pulping process because of assurance of thorough mixing, a considerable savings of steam and a high concentration of cooking liquor. A shorter cooking cycle enables users to get greater production.

Leading paper makers the world over like Mead, choose Biggs when it comes to globe rotary digesting equipment, for they know they are getting the benefit of unequalled rotary digester experience from the world's largest manufacturer.

THE BIGGS BOILER WORKS COMPANY

1015 BANK STREET • AKRON 5, OHIO

WELDING PIPE FITTINGS OF STAINLESS STEEL...

in regular and special analyses

HERE are precision made fittings that give you stronger, lighter joints, accurately aligned, easily installed, and free from costly maintenance. They are made in both butt weld and socket weld types, in 90° and 45° elbows, 180° returns, tees, caps, reducers, laterals, crosses, and lap joint stub ends.

Sizes range from 1" to 14". Larger sizes are made to special order, and special shapes and types are made to engineering specifications.

To combat corrosive agents of various kinds, a selection of both standard and special analyses is available. One of these in all probability will fit the special need in your plant. Inquiries involving any corrosive problem are welcome. See your nearest ESCO representative or write us directly, giving details of corrosive agents used, their concentrations, temperatures and pressures. For dimensional data on ESCO Welding pipe fittings fill in and mail the coupon.

ESCO STAINLESS AND HIGH ALLOY STEELS

ELECTRIC STEEL FOUNDRY

2166 N. W. 25th Avenue, Portland 10, Oregon

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Dealers in all Principal Cities

ELECTRIC STEEL FOUNDRY
2166 N. W. 25th Avenue, Portland 10, Oregon.
Please send dimensional data on ESCO welding pipe fittings.

Name_____

Company_____

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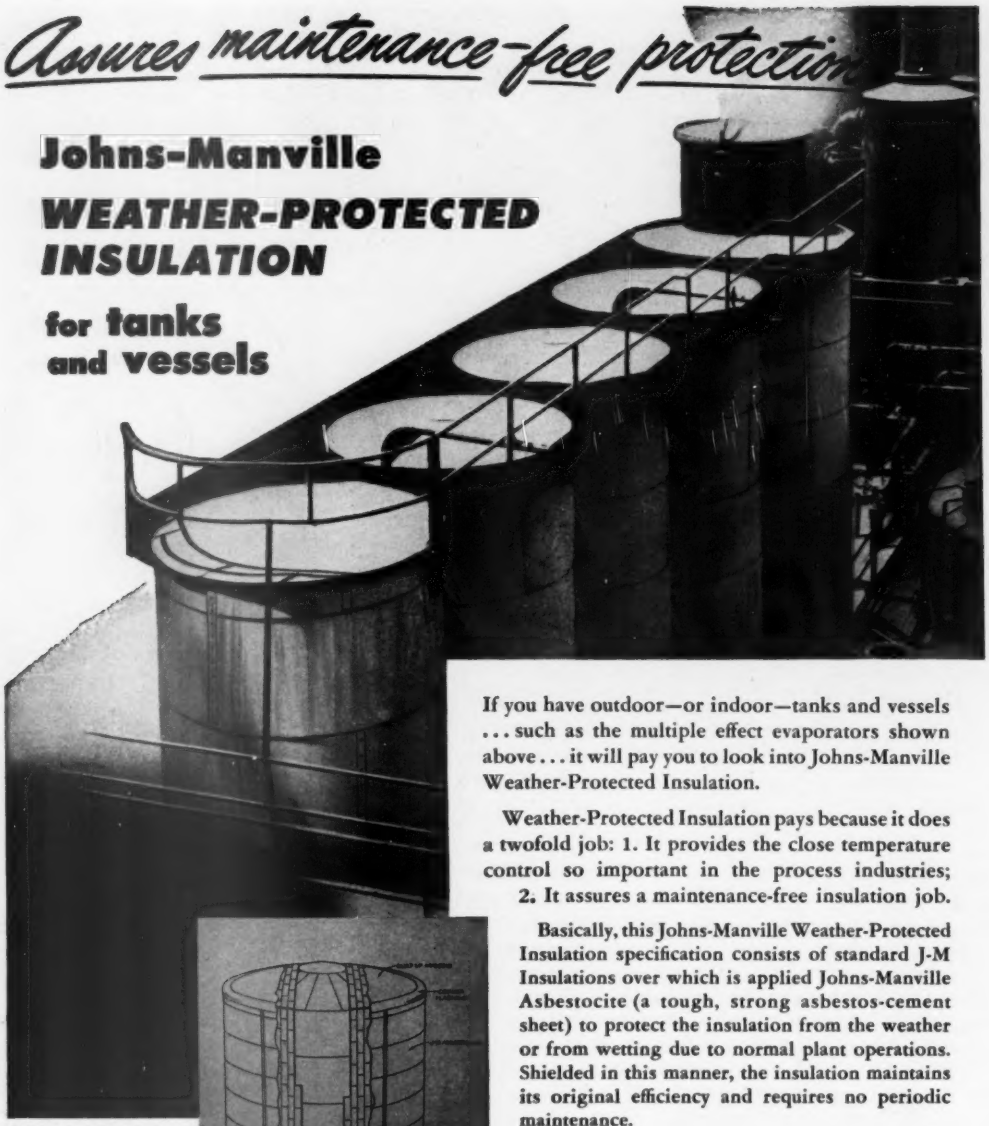
City_____

Zone_____ State_____

Assures maintenance-free protection

Johns-Manville
WEATHER-PROTECTED INSULATION
for tanks and vessels



If you have outdoor—or indoor—tanks and vessels ... such as the multiple effect evaporators shown above ... it will pay you to look into Johns-Manville Weather-Protected Insulation.

Weather-Protected Insulation pays because it does a twofold job: 1. It provides the close temperature control so important in the process industries; 2. It assures a maintenance-free insulation job.

Basically, this Johns-Manville Weather-Protected Insulation specification consists of standard J-M Insulations over which is applied Johns-Manville Asbestocite (a tough, strong asbestos-cement sheet) to protect the insulation from the weather or from wetting due to normal plant operations. Shielded in this manner, the insulation maintains its original efficiency and requires no periodic maintenance.

If you wish, a Johns-Manville Insulation Engineer will be glad to survey your equipment and make appropriate recommendations. For further details, send for a copy of folder IN-121A. Address Johns-Manville, Box 60, New York 16, N. Y.

Cutaway drawing shows how Johns-Manville Weather-Protected Insulation is applied to a tank—Standard methods for mechanical securement of the insulation are used. Asbestocite sheets are then applied over the insulation, following a simplified Johns-Manville specification.

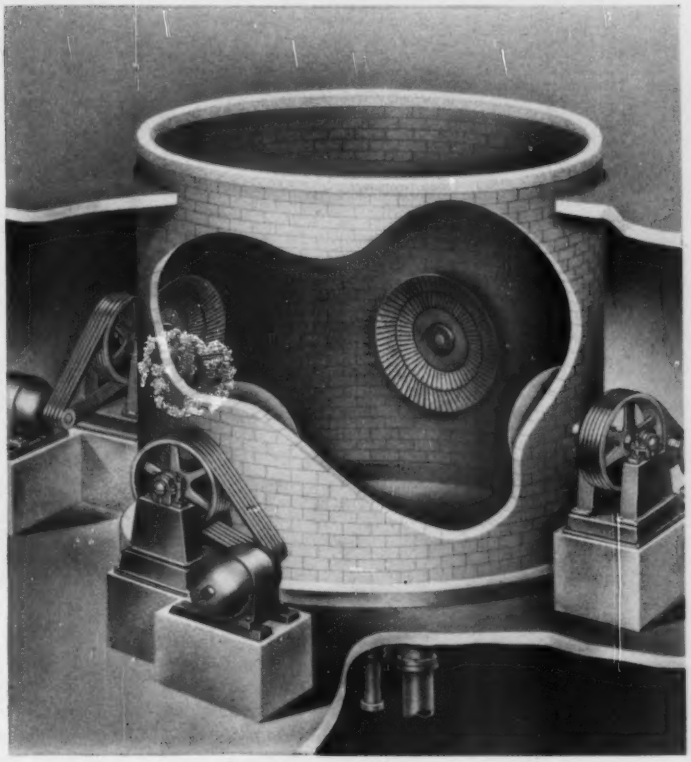
JOHNS-MANVILLE JM PRODUCTS

Johns-Manville *first in* INSULATIONS

RICE BARTON

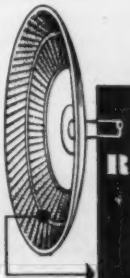
QuatroPulper

. . . a high production machine . . . ideal for disintegrating pulp, broke or waste paper



The stock is charged all at one time into the top of the vat. Four DynoPellers (described below) subject it to the vigorous dynomizing action that completely separates each fibre from its neighbor, maintaining its original length. The simple operating principle and design of the QuatroPulper eliminates the "wracking" and grief of other types of pulpers. Because there are few moving parts there is no loss of production time due to repair or adjustment. The QuatroPulper defibers the stock at low cost and produces a high quality slurry quickly and effectively.

The DynoPeller
is the heart of all DynoMachines. Its concave face is lined with rough, hard carbide particles. As the DynoPeller rotates it causes a suction at its center that pulls the stock toward it. Centrifugal force then causes the stock to flow rapidly over the rough carbide particles under a gentle hydraulic pressure. This effective dynomizing action completely disintegrates the stock . . . separating each fiber from its neighbor while maintaining its original length.



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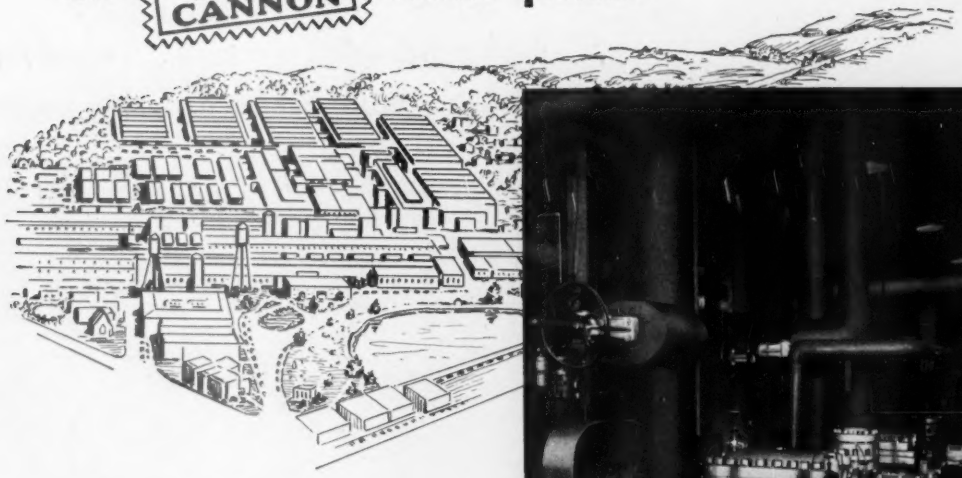
RICE BARTON *Research Corporation*
WORCESTER 1, MASS.

HMTA PUMPS

feed new high pressure boiler at CANNON mills plant



Expansion program at world famous textile mill includes installation of newest design boiler feed pumps

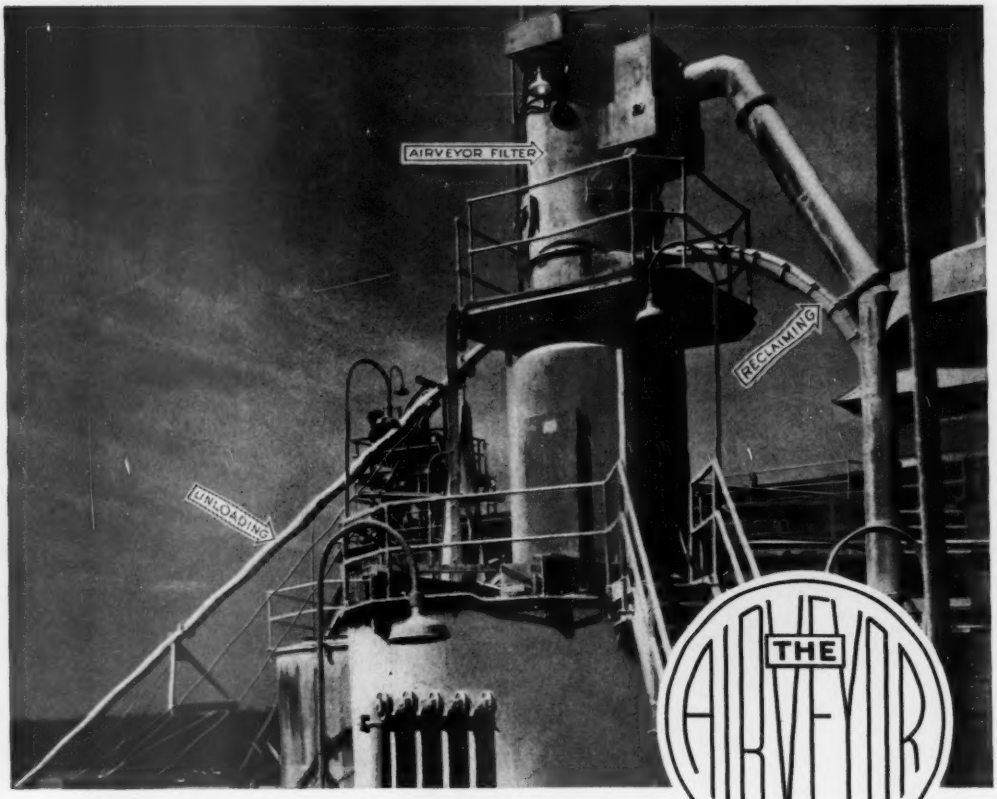
Cannon Mills main plant at Kannapolis, N. C.—home of world famous linens and toweling—has been expanding steadily for the past three years. To meet its increased power needs, an additional 7500 kw turbine was put on line about a year ago.

Ingersoll-Rand Class HMTA boiler feed pumps were selected to serve this completely modern generating unit. The installation, shown above, includes two four-inch, 6-stage high pressure pumps, each capable of delivering 700 gallons per minute at 1700 feet total head. The main feed pump shown in foreground, is driven by a 400 hp steam turbine, while the duplicate standby unit has electric motor drive. These HMTA pumps, with I-R Unit-Type rotor assemblies, assure maximum continuity of service at sustained high efficiency and permit substantial savings in maintenance and inspection costs.

Ingersoll-Rand offers you a complete line of advanced design centrifugal pumps in types and sizes to meet every power plant and industrial requirement. Your nearest I-R representative will be glad to give you complete information.

COMPRESSORS • DIESELS • PUMPS
AIR AND ELECTRIC TOOLS
GAS ENGINES • ROCK DRILLS
CONDENSERS • VACUUM EQUIPMENT

Ingersoll-Rand
Cameron Pump Division 762-10
11 Broadway, New York 4, N. Y.



Efficient - - - economical handling of lime and salt cake at Hudson Pulp & Paper, Palatka Plant

Again, the Airveyor was selected and installed in another paper mill . . . the new 10 million dollar unit of the Hudson Pulp & Paper Corporation at Palatka, Florida. One of the newer paper mills in the South, which first started operation in November, 1947, has more than doubled its production.

The handling of raw materials, in an efficient and economical manner, was highly essential in such a modern operation. The unloading and storing of lime and salt cake was one of the problems to be considered. Two Airveyors are in use at Palatka. One system unloads and reclaims salt cake, and the other handles the pebble lime. The salt cake system unloads from box cars at rate of 10 tons an hour, conveying to storage bins; also conveys this same material from a truck-dump hopper to a bin. The same system reclaims from bins and delivers to a mixer. The pebble lime system unloads from box cars at rate of 7½ tons an hour and conveys to storage bins. It also reclaims at the same rate, for delivery to process.

When your problem is conveying, consult Fuller. We will be glad to study your conveying and make recommendations for the betterment of vour operations . . . without any obligation, of course.

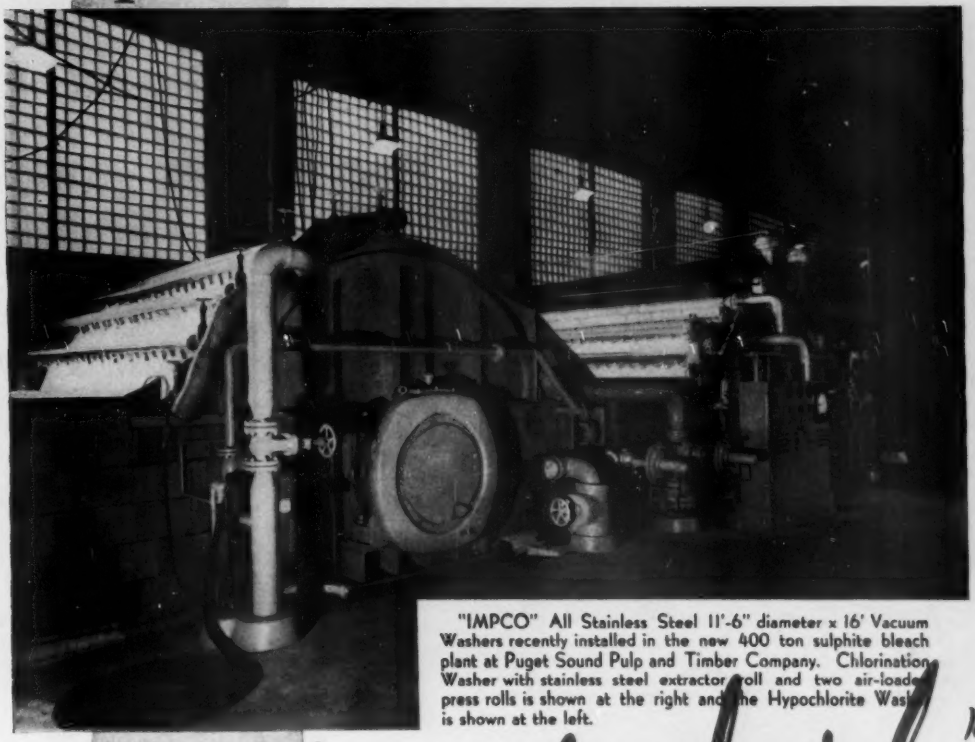
FULLER COMPANY, Catasauqua, Pa.
120 So. LaSalle St., Chicago 3 — 420 Chancery Bldg., San Francisco 4

Fuller

A-144

26 YEARS' EXPERIENCE IN PNEUMATIC CONVEYING

Impco Bleach Plant Washers



"IMPCO" All Stainless Steel 11'-6" diameter x 16' Vacuum Washers recently installed in the new 400 ton sulphite bleach plant at Puget Sound Pulp and Timber Company. Chlorination Washer with stainless steel extractor roll and two air-loaded press rolls is shown at the right and the Hypochlorite Wash is shown at the left.

"tailored-for the job"

Stepping up the production of bleached pulp to keep pace with increasing demands is a big problem today. To do this - and yet maintain uniform high quality is another.

In both instances, these are problems which need individual solutions. To solve them, equipment designed for your own particular plant is needed.

That is why "IMPCO" "tailored-for-the-job" design can be the answer for you.

Every "IMPCO" Bleach Plant Washer is correctly engineered to fit your needs, to give you the necessary flexibility in tonnage and above all, quality production.

If you are planning a new bleach plant or an increase in production in your existing plant, "IMPCO" offers you a complete line of equipment for any type of system, including chlorine dioxide.

With an experienced "IMPCO" representative working step-by-step with your engineers, you can be sure of the answer that is best for you.

IMPROVED PAPER MACHINERY CORPORATION
Nashua, New Hampshire

Sherbrooke Machineries Limited manufacture similar equipment in Canada

Oliver Model "FDE" with air steering skidding log scaling 5500 feet.

..Profit Pointers for You!

Here are three big advantages of Oliver Tractors that mean profitable logging for you.

1. *FINGER-TIP AIR STEERING.* An Oliver Tractor equipped with air steering enables your operator to control the tractor with just two fingers of one hand. The other hand is free to control the dozer or winch . . . operator faces forward in a natural position and has the tractor and equipment under complete control all the time. Combine air steering with exclusive Oliver steering principle that keeps power on both tracks at all times, and you'll see why you'll get more efficient logging.
2. *HIGHEST CLEARANCE.* The unobstructed high clearance of Oliver tractors permits you to operate weeks longer in the woods without miring down. You get out more logs per season because you get a longer tractor logging season.
3. *LONG LIFE TRACKS.* Oliver track design and construction mean far longer track life. You save maintenance and down time costs . . . keep your tractors operating when you need them.

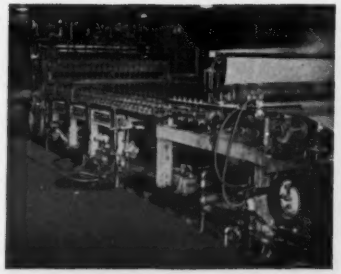
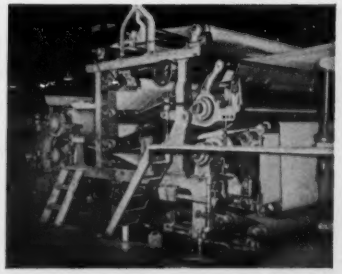
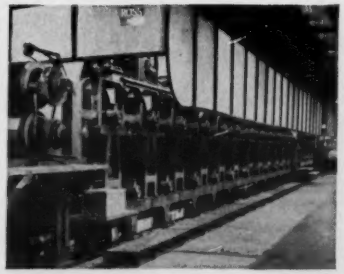
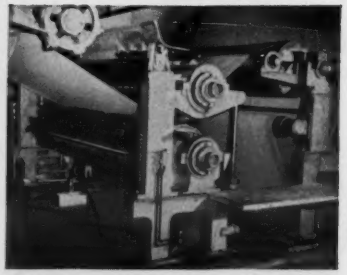
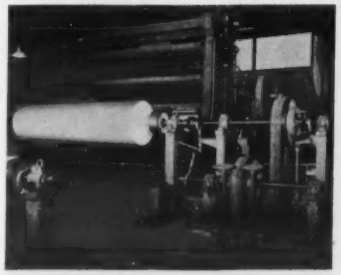
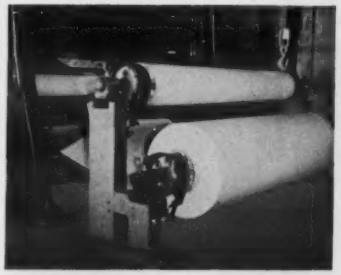
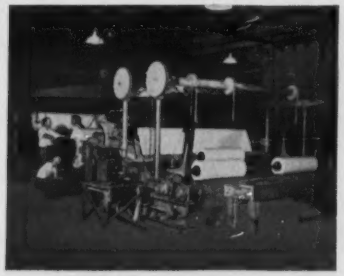
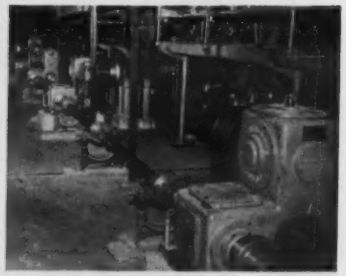
Combine these Oliver *plus* features with all the other great Oliver advantages and it's easy to see why, for profitable logging, your choice is Oliver.

For the complete story, see your Oliver Industrial Distributor.

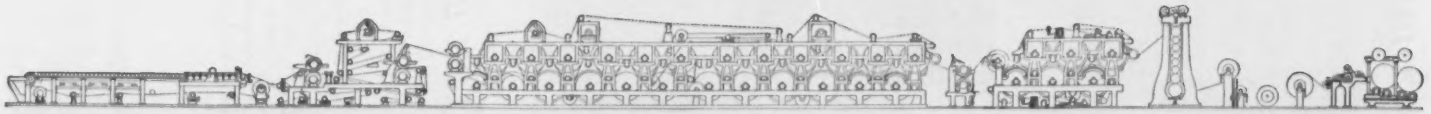
THE OLIVER CORPORATION

Industrial Division: 19300 Euclid Avenue, Cleveland 17, Ohio.

A complete line of industrial wheel and crawler tractors

Latest Moore & White Fourdrinier machine with 136″ wire operating on specialty grades at Hopper Paper Co., Taylorville, Ill. Above views show various machine sections and Moore & White Syco-type machine drive.



The MOORE & WHITE Company 15TH STREET AND LEHIGH AVENUE PHILADELPHIA 32 PA. • CUSTOM-BUILT MACHINES FOR PAPER MAKERS

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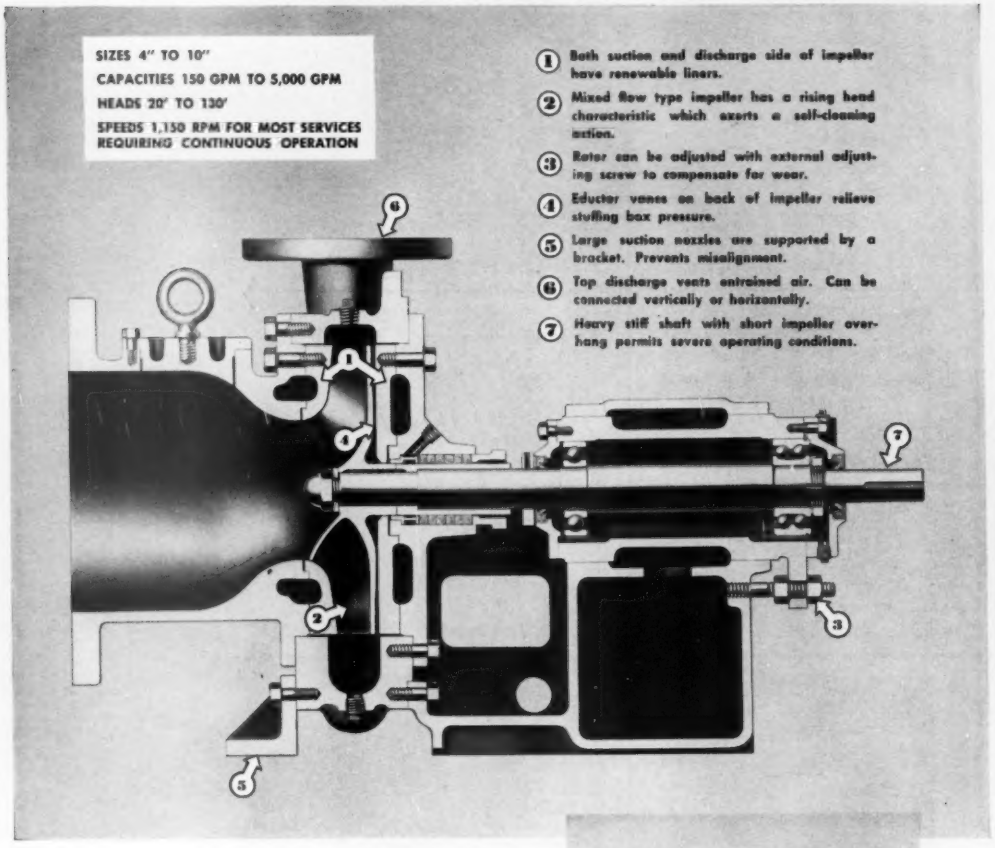

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STOCK PUMPS

Look at the seven outstanding features shown in the cross-section and you'll see why De Laval type CS Stock Pumps stay on the job for years . . . trim maintenance costs. Stock flows freely through a large suction nozzle, an exceptionally large throat area and an unbroken streamlined volute. This minimizes clogging, contributes to high hydraulic efficiencies, lowers inlet velocities, permits the handling of high stock densities with low submergences and prevents de-watering of free stock.

Write today for Bulletin 1100 giving full application and specification data.

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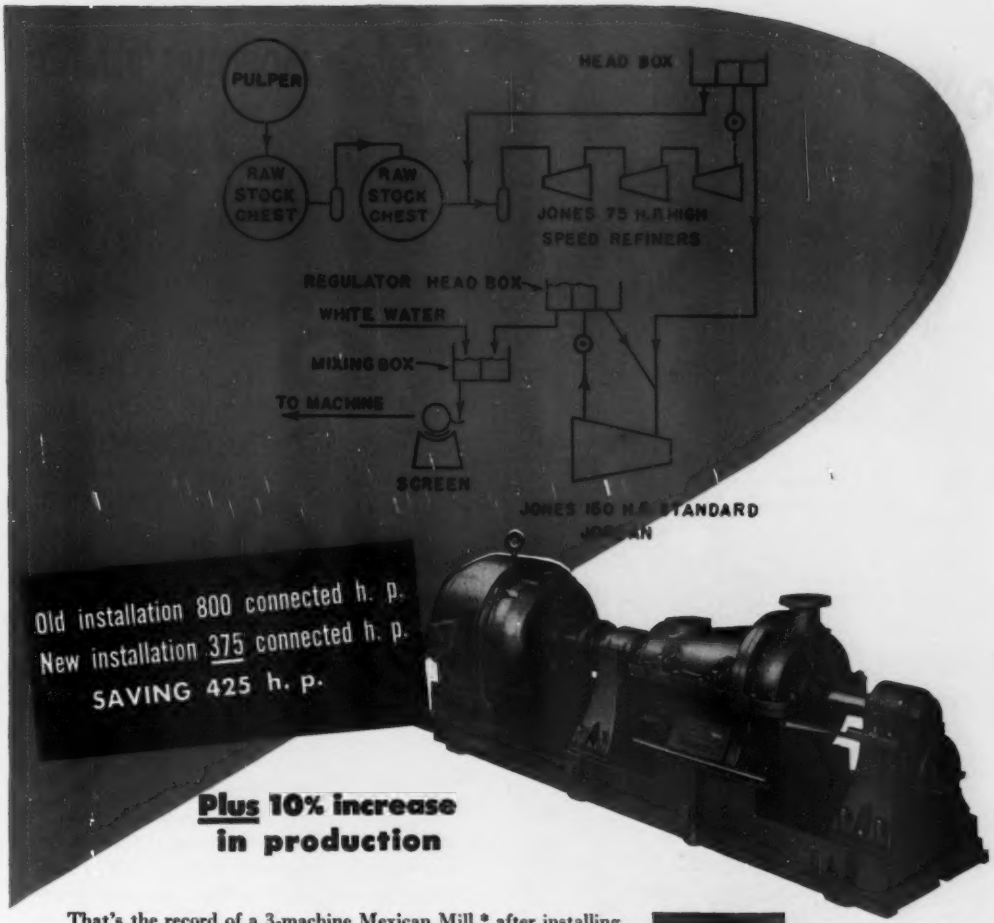

That's the record of a 3-machine Mexican Mill,* after installing the Jones equipment shown in the flow-chart above.

Three Jones High-Speed Refiners and one Standard Jordan replaced two 250-h.p. refiners and two 150-h.p. Jordans when this mill modernized the stock preparation for its largest paper machine — making about 20 t.p.d. of sulphite bonds and 12 to 14 t.p.d. of manifold papers.

The new installation has increased production by 10% while producing equal or better quality papers. Why don't *you* find out what the Jones High-Speed Refiner can do for your cost and quality controls? Ask your Jones representative or write direct for Bulletin EDJ-1011B.

**Name on request*

MR. C. H. VICKERY, Sales Manager of E. D. Jones & Sons Co., says:

"This example, typical of many in our files, helps explain the popularity of this versatile, highly economical refiner. More than 1000 of these 'mighty mites of stock preparation' have been sold (not including those made by imitators!) since it was introduced in 1935."

E. D. JONES & SONS COMPANY
Pittsfield, Massachusetts

BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

Once through the FULTON ROLL PRESS made the difference in these knots!

69.6% MOISTURE (Before)

Unretouched photo of soggy mass of knots soaked in black liquors, just as they came from the digester. Note how cooking failed to reduce knots.

Independent Testing Laboratory Report Confirms Results of Test Run on Knots for Large Southern Kraft Mill

44.9% MOISTURE (After)

Unretouched photo of same knots after a few moments in the FULTON Roll Press. Note how thoroughly black liquors have been expressed and fibers broken up.

The pictures tell the story. Here is the answer to one of your knottiest mill problems! The FULTON Roll Press does an equally impressive job on bark, tailings and similar mill waste — permitting redigestion, refining or profitable utilization as fuel.

all in ONE LOW-COST, CONTINUOUS operation

The FULTON Roll Press makes costly "batch" methods obsolete—saves so much *labor, power, handling equipment, time* and *money* that it soon pays for itself.

May we Prove It by processing a sample of your material without obligation?

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FULTON IRON WORKS COMPANY

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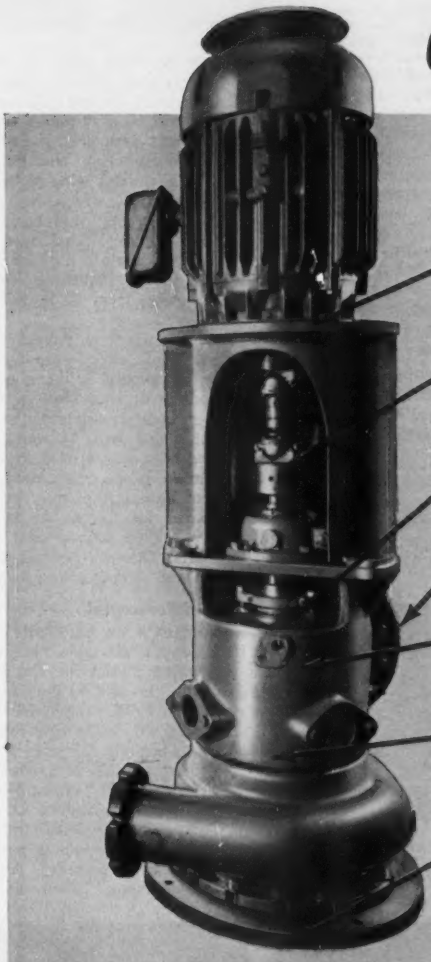


NO ALIGNMENT
Motor is bolted directly to motor pedestal, connected through universal joint spacer coupling. No close alignment necessary.

ACCESSIBLE COUPLING
Open motor pedestal allows easy access to universal joint type coupling, yet maintains rigid alignment.

EASY ACCESS
Stuffing box is easy to get at, too, making inspection and proper maintenance simple.

16-INCH SUCTION
16-inch suction opening on all pump sizes means low velocity at suction. Most air binding problems are eliminated.

GRAVITY FEED
Stock feed into eye of impeller is accelerated by gravity. Heavier stocks can be handled without difficulty.

LESS SPACE
Vertical design requires only one quarter as much floor space as a horizontal pump of the same capacity.

SMALLER FOUNDATION
Foundation is smaller and simpler than with horizontal design. Foundation costs are reduced.

GET THE FACTS — You can get complete information on this and other Allis-Chalmers pumps especially designed for pulp and paper mills by contacting your nearest Allis-Chalmers District Office or by writing Allis-Chalmers, Milwaukee 1, Wisconsin.

A-3823

ALLIS-CHALMERS

See Rhinelander Run!

THREE NEW MACHINES IN PAST DECADE

Up in Northern Wisconsin, in the "Land o' Lakes," where much of the terrain has been turned back to its natural destiny of growing trees, is the Rhinelander Paper Company, one of the most successful and rapidly-growing units of this industry —makers of "Unusual Papers for the Unusual Jobs."

No other single plant site on the continent has put in three entirely new machines in just ten years—and still Rhinelander is unable to meet the demand today for its glassine and greaseproof specialties and tissue. New uses for its papers are frequently being found and President Folke Becker states that there are a number of untouched sales fields which it could exploit if the need came.

The industry well remembers when Rhinelander brought its No. 6 machine, "The Big Swede," into production in December, 1941. The 182 in. wide, 280 ft. long Fourdrinier attained speeds up to 750 f.p.m. (first detailed description and pictures in PULP & PAPER Dec. 1944).

Then came No. 7, "The Ripco Maid," same width and similar to the Big Swede, which started up in the fall of 1949.

And now—No. 8, a 132 in. Fourdrinier. Its maiden run was made last Nov. 21 and this year it will add 6,000 tons to Rhinelander's production, bringing it to a total of 51,000 tons a year. Glassine and greaseproof, of course, are not grades that figure high in tonnage. But Rhinelander today concedes no other peer in the world in the total production of these grades. Incidentally, the company decided with No. 8 to forego a nickname.

It started out in project form to be just a rebuild of the No. 3 Yankee, but the Korean war and demand for Rhinelander products soon changed this. No. 3 is still in production and No. 8 is entirely new and a straight Fourdrinier. Sizes of older Rhinelander machines are: No. 1, 108 in.; No. 2, 102 in.; No. 3, 132 in.; No. 4, 140 in.; No. 5, 120 in. In the new design for No. 8, the size was the same as No. 3 but it was necessary to change "the hand" from right to left side. This entailed scrapping considerable engineering work and re-checking and revising many drawings.

FOLKE BECKER, President and General Manager—Built glassine industries first in New England, than at Rhinelander.

A new electric power generating plant —with largest industrial turbine in Wisconsin—was completed in Sept. 1951, in readiness for the machine expansion.

Other recent important developments at Rhinelander include the expansion of the use of Morden Stock-Makers. In all now, there are 40 Morden Stock-Makers in the Rhinelander Mill—more than in any other paper mill in the world—and a 41st is on order. This counts spares; the introduction of the new Morden Slush-Makers; also new types of E. D. Jones & Sons Bertram stainless steel beaters and their comparatively new Pulp-Master.

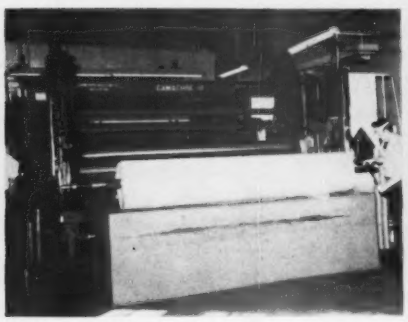
Also, now building, what is the first semi-chemical plant whose product will be used for quality papers of the glassine grades. This will be a 40 tons a day neutral sulfite plant with 65% to 70% yield from aspen even after bleaching. The product will be mixed with Mitscherlich type sulfite pulp, of which Rhinelander makes 100 tons a day, and besides gets sulfite pulp from a Rhinelander-owned digester in an Ontario mill. Bleach plant capacity (it was new just three years ago) will be increased from 80 to 105 tons a day.

Meanwhile, a General American Conkey 4-body triple effect evaporator, and other new equipment is being added to the by-products division. Over a year ago Rhinelander bought outright the torula yeast plant, using half its waste liquor, which up to then was owned by a group of sulfite mills as an experiment. Latest development here is that its yeast is being up-graded for human foods. Up to now it has served animal and poultry food markets. Other by-products from evaporation and drying are anticipated.

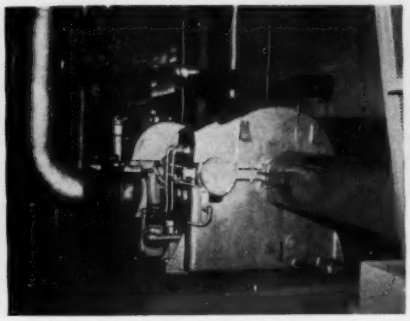
THIS AIR VIEW of Rhinelander shows new Yeast Plant in foreground but new No. 8 Machine Room has been added onto building in foreground area.

History and Personnel

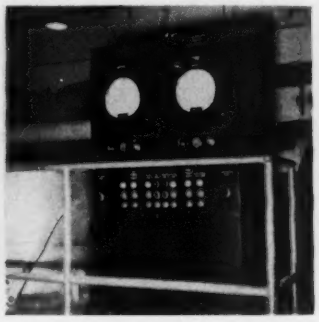
These are just a few highlights of a dynamic company which goes back to 1903, when in unique manner it was founded by a group of far-sighted citizens in the town named for F. W. Rhinelander, a New York capitalist who built a railroad there in 1882. It has brought far more wealth to the town than all the 22 sawmills that Rhinelander (then Pelican Rapids) boasted of in the heyday of lumbering. Founders of what was a $250,000 2-machine newsprint and wrapping paper mill were lumbermen-brothers, Anderson, Webster and Edward Brown and their



CAMERON WINDER on Rhinelander's No. 8 Machine with constant tension winder and ROTARY LIFT CO.'s automatic hydraulic hoist which lowers rolls from winder to floor or to dollies, replacing hand operated hoist.



WESTINGHOUSE 350 HP. Steam Turbine is prime mover for New No. 8 Beloit machine at Rhinelander. It is connected to basement shaft through Falk gear with takeoff by flat belts to machine sections.



FOXBORO COMPANY provided special beater loading controls, shown here, for new 1500 lb. E. D. JONES & SONS CO. stainless tub Bertram beaters which combine with MORDEN Stock-Makers serving No. 8 Machine.

ROBERT F. NELSON (left), Executive Vice President, and BENTON R. CANCELL (right), Vice President in Charge of Operations, of Rhinelander Paper Co.

friends, who had vision to seek a new economy.

But the big impetus of growth came when a combination of Swedes and Yankees who had created a successful and still-thriving glassine industry in New England moved on to Wisconsin in 1925. The leader was, of course, Mr. Becker, born in southern Sweden, educated in Germany, who was called to Rhinelander to become general manager. He brought some of his close associates in New England, added others with Wisconsin mill backgrounds. Mr. Becker lost two important associates, his longtime superintendent, Lewis Dozier, and his engineer, F. W. "Stub" Johnson, whose passing strangely came within weeks in 1950.

But, meanwhile, others stepped into the breach in the fast-growing industry. They include:

R. F. Nelson, U.S. Naval Academy graduate who served in two World Wars, and who became executive vice president of Rhinelander in 1947. Resigning from the Navy after overseas service in World War I, he helped to found, then engineered and managed the Glassine Paper Co., and was its president when he resigned to go back into the Navy in World War II.

Benton R. Cancell, former executive with Powell River and St. Regis, who came to Rhinelander in late 1950 as vice president in charge of operations. In World War II he headed the Forest Products Bureau of the War Production Board.

Robert E. Harper, 20 years with the company and now its administrative engineer, which embraces responsibility for new design, supervision of purchases and selection of materials, and he has direct charge of new construction. He joined Rhinelander after graduating in chemical engineering from the University of Nebraska, starting in the lab and working in the pulp mill.

Robert H. Jensen, who came to the company as power engineer 25 years ago, and has the title of chief engineer, embracing responsibility for all maintenance as well as both steam and electric power. He is a graduate of the U. of Wisconsin.

Sigge Ekman, the veteran sulfite superintendent who came from Sweden; Dr. Karl Fries, technical director who came from Germany; Leonard "Parkie" Parkinson, British-born paper mill superintendent; and some other operating and technical personnel had indirect roles in the expansion as their technical and operations experience were the background for many decisions.

Keeping pace with mill expansion is the rapid growth of converting division at Rhinelander—whose advertising slogan is "unusual papers for the unusual jobs." This division has been under the direction of Folke's brother, Gustav Becker, since they came to Rhinelander. Expansion in laminating, lacquering, waxing, automatic packaging, and the addition in just two years of two warehouses for finishing and converting, have been typical of the integration trend of the industry forced by high taxation which would, in effect, be double or triple taxation without it.

In by-products expansion, working closely with engineers has been Jesse Holderby, manager of the division, and formerly manager of by-products research for the entire Lake States sulfite industry in Appleton.

While not directly involved in the manufacturing expansion and planning, other key men at Rhinelander are Robert L. Caldwell, vice president in charge of woods activities; Louis McNamara, veteran director of industrial relations; and Alan Pradt, who heads products promotion. Directors who have weighed and approved each step in expansion are Mr. Becker, Mr. Caldwell, Mr. Nelson, two of the Brown scions—A. C. and W. D. Brown, Ernest Draheim and E. A. Forbes.

RHINELANDER'S TOP ENGINEERS: ROBERT E. HARPER (left), Administrative Engineer, who was in charge of new construction, new purchases of equipment. ROBERT H. JENSEN (right), Chief Engineer, in charge of all maintenance and steam and power.

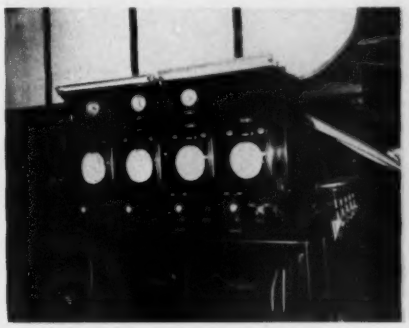
New Building for No. 8

The new No. 8 machine called for expansion of a machine room building. The addition alongside old No. 5 room is now one room, 85 by 320 ft. and houses No. 5 and No. 8. A spacious aisle between them allows for a removable Fourdrinier and ample working space. Fluorescent lighting and paint in two shades of green make it attractive and improve working conditions. General contractor for all new construction at Rhinelander was C. R. Meyer & Sons Co. of Oshkosh, Wis.

It is interesting to note many similarities of the equipment for, and auxiliary to, the three new machines of the last ten years at Rhinelander. All were made by Beloit Iron Works—the smaller No. 8 was Beloit's No. 5350 project. Thomas J. Burns was Beloit's erector in charge at the job site, as he was at Northern Paper Mills just preceding this assignment, and before that at Coosa River.

Preparation of Stock

Ahead of No. 8, as they are at No. 6—the Big Swede—are Bird Machine Co. Centrifiners, for stock cleaning. Two 1500-lb. Jones Bertram beaters are combined with five Morden Stock-Makers for No. 8 stock preparation. There is a battery of nine Mordens ahead of 7, and eight Mordens ahead of 6. But for 8, higher refining for certain grades was desired and the combination of both widely used types of equipment was decided upon. The beaters have stainless tubs with tile floor



MASON-NEILAN REGULATOR CO. provided these drier steam controls for new Rhinelander Machine, which operate with Tenso-Temp tension roll actuating the control as paper dries out. WIRE PIT of No. 8 Machine at Rhinelander is

Chem-tiled by CHEMICAL LININGS INC. This company provided tile beater, broke and machine tanks and mix and white water Chem-tile boxes.

E. D. JONES & SONS CO. Pulpmaster, a 2,000 lb. unit, handles broke and pulp ahead of Jones-Bertram beaters. This is the third in series of five Jones Pulpmasters going in at Rhinelander.

and lava stone rolls, and are driven by Westinghouse 350 HP motors. An unused wet room provided space for this equipment.

The E. D. Jones Pulp-Master, a 2,000 lb. unit, is handling broke and pulp before the Jones-Bertram beaters—it being the third in the mill, and one of five in all on the program schedule.

Special Foxboro beater loading controls have been made expressly for the new beaters, which set beating time and range of weight on rolls from zero to 100%.

All tanks and chests ahead of and serving No. 8 are tile constructed by Chemical Linings, Inc.—Chemtile beater tank, broke tank, machine tank, mix boxes and white water boxes. Here is a difference from the Ripco Maid which has concrete tanks except for one of tile. Also Chem-tiled are the couch and wire pit. No. 8 paper is primarily for perishable food packaging.

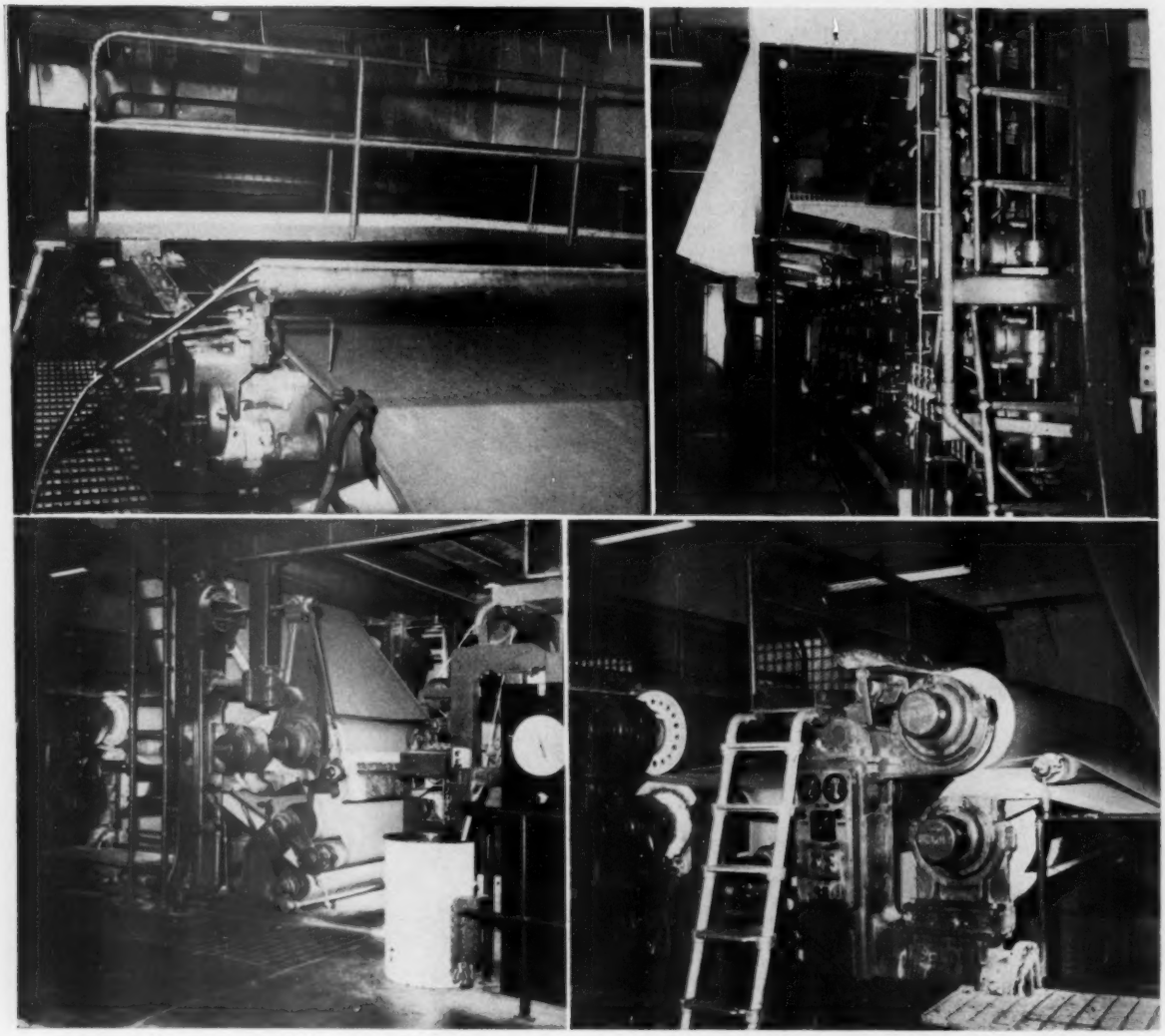
Valley Iron Works inlets and headboxes and adjustable slices are now on every machine at Rhinelander—the seven on glassine and one on tissue. They are fabricated of 12 gauge stainless steel. The new No. 8 inlet, especially designed for glassine papers, is smaller than the inlets for 6 and 7, which are 36 in. above the wire but all have submerged apron board, as well as many other improved design changes. It was after the Big Swede and Ripco Maid identical headboxes and inlets were provided by Valley, that smaller similar units were made for all the Rhinelander machines.

All stock-lines for the new machine are of fabricated stainless steel, and stainless is required and extensively used in the other machine stocklines. The pumps for stock are Gould's and Shartle's as are most others, and a DeZurik consistency regulator follows the new beaters for No. 8. Improved Paper Machinery Co. provided agitation for tanks and chests.

Air Systems and Auxiliaries

J. O. Ross Engineering Co. has provided the heating and ventilating system, as on 6 and 7. The Ross Briner economizer and hood and Ross-Grewin system on driers are now on five of the eight machines at Rhinelander, but these later machines were the first to be so fully equipped at the time of construction.

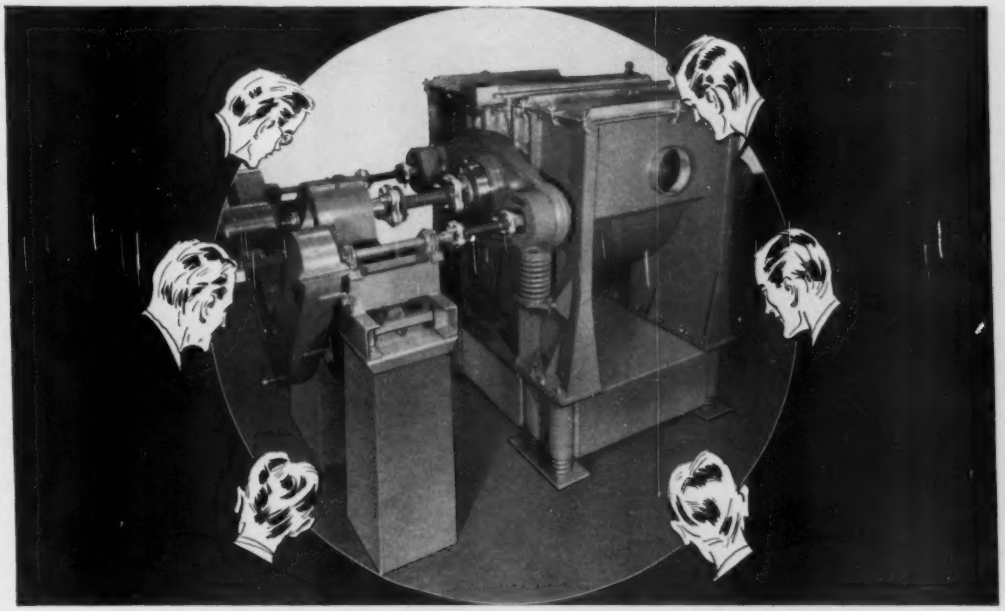
The same kind of mechanical type drive is provided on 6, 7, and 8, but of course, it is a smaller unit on No. 8. The prime mover is a Westinghouse 350 hp. steam turbine 125 lbs. pressure, and discharges



FOUR VIEWS OF THE NEW NO. 8 MACHINE AT RHINELANDER PAPER CO. MADE BY BELOIT IRON WORKS. Top left: View of the Wet End of the Press of No. 8 Machine. Top right; Dry Section of No. 8 Machine showing the J. O. ROSS ENGINEERING CORP. hood. Lower left: View of Press Section No. 8 Machine which is provided with STOWE-WOODWARD, INC. rubber-covered rolls. Lower right: MASON-NEILAN REGULATOR CO. Controls and instruments for dryer steam control, using Tenso-Temp roll.

Why This World Wide Interest in

BIRD VIBROTOR SCREENS?



The answer is obvious — extraordinary performance

One mill is screening semi-chemical pulp at the rate of 50 to 60 tons per Vibrotor Screen per day — and has repeat ordered.

On unbleached kraft and sulphite stocks, Vibrotor Screens are handling up to 65 tons through .012″ cut plates with stock consistency at 1.6%.

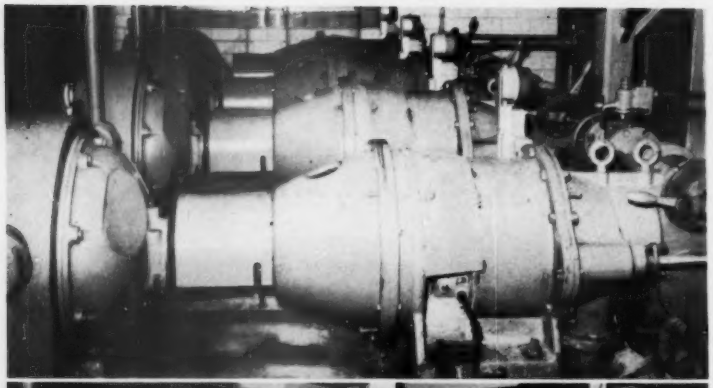
On mixtures of pine and short fibred stock, one Vibrotor Screen delivers up to 90 tons per day.

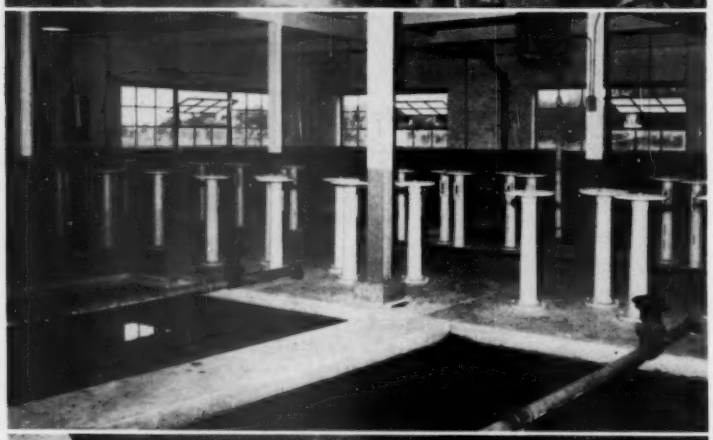
Used ahead of the paper machine, Vibrotor Screens are delivering stock that could not otherwise be put over the wire and made into salable paper.

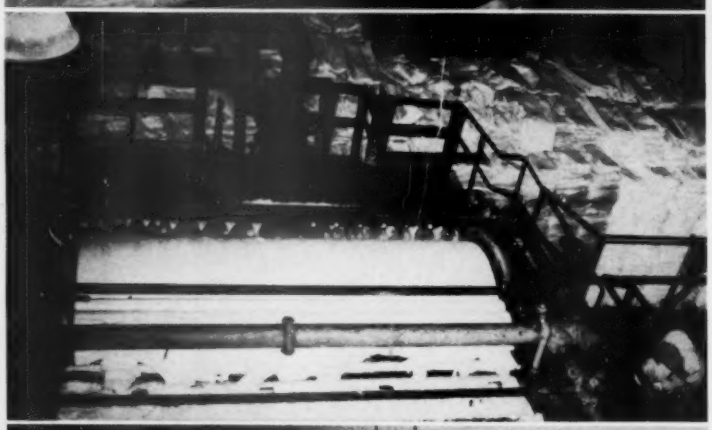
Ask us to tell you more about the Bird Vibrotor Screen and the remarkable results it can achieve in small space at low cost.

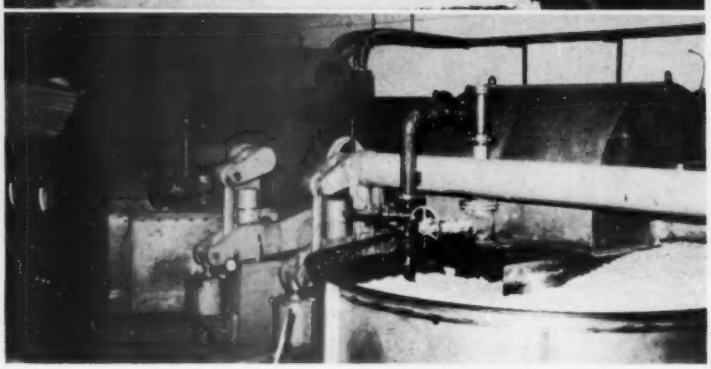
BIRD MACHINE COMPANY

SOUTH WALPOLE • MASSACHUSETTS









at 10 lbs.—water exhaust going to driers. It is directly connected to a basement line shaft, through a Falk reduction gear with takeoff by flat rubber belts to the various sections of the machine. All three machine drives have enclosed Beloit hypoid gear units belted from the line shafts.

Midwest-Fulton drainage systems, Bowser oiling and Nash vacuum pumps have been standard equipment for all the three machines. Likewise, at the end of the machine are Cameron winders, but of smaller width for No. 8, all with constant tension control.

An interesting new addition, however, after No. 8 is a mechanism manufactured by Rotary Lift Co. (Memphis, Tenn.) which works like an automobile hoist, lowering the rolls from the winder to the floor or to dollies, as required, with automatic hydraulic operation. This replaces the conventional hand-operated hoist.

Before elaborating on the machine description itself, it may be pointed out that Rhinelander went to Mason-Neilan Regulator Co. for instrumentation. As on the Big Swede, too, No. 8 has Mason-Neilan drier steam control, using a Tenso-Temp (tension) roll, which works in this manner—as paper dries out more tension is put upon the roll which actuates the steam control.

Comparison of Machines

Beloit's No. 8 machine consists of a 132 in. by 80 ft. long wire, 3 conventional and one reverse press, 20 driers before a size press, then 11 more driers before a calender stack, dampener and reel.

Since there have been no complete reports published on the Ripco Maid, the 1949 machine and No. 7, it may be of interest to detail some of its features in comparison with No. 8. No. 7 is 182 in. with 100 ft. long wire, like No. 6, and in many other ways they are similar, as we have stated.

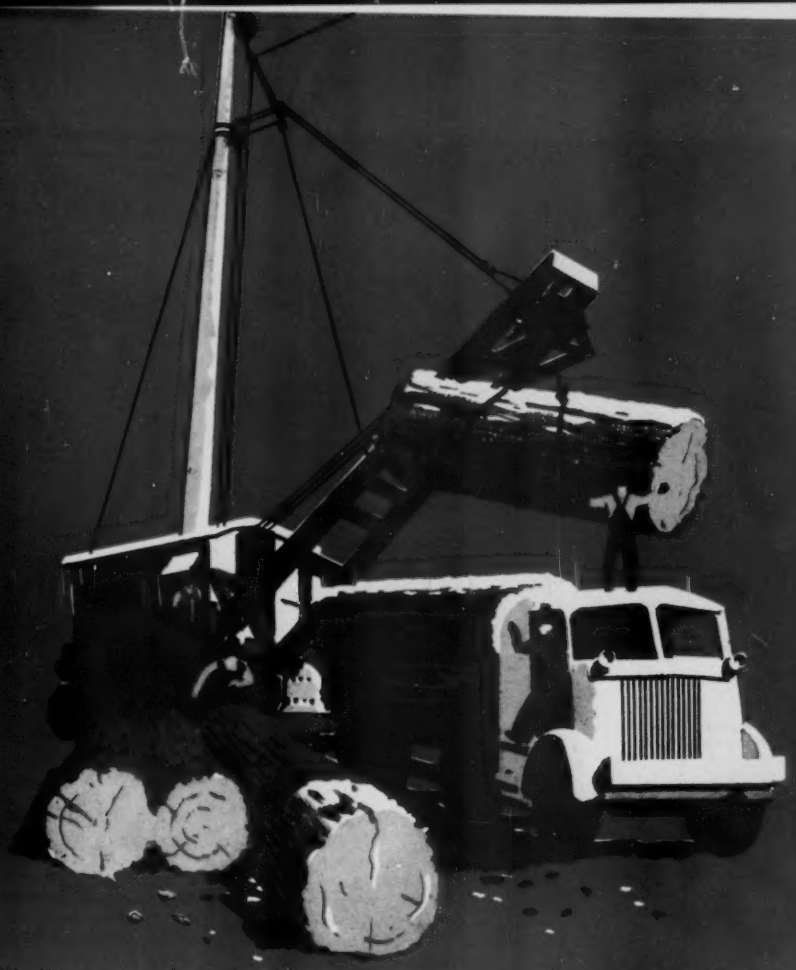
Nos. 6, 7, and 8 all have removable Fourdriniers with stainless steel clad main beams and cross members, Beloit Universal high speed shakes, stainless savealls from breast roll to guide roll, Beloit suction couch rolls with wide boxes. The Big Swede press section was the first of overhung construction by Beloit, with one suction press and four plain presses. Then No. 7 came along with Beloit's new enclosed diaphragm loaded presses with close press spacing, but still ample operating room, and it had a second suction press. Now No. 8 is of the new style, but

NEW EQUIPMENT AT RHINELANDER: Top to Bottom—FIVE MORDEN MACHINES CO. Stock Makers serving No. 8 Machine. All told in this mill there are more Stock-Makers than any other mill in the world.

VIEW OF THE NEW DORR FILTER PLANT at Rhinelander Paper Co.

GENERAL VIEW OF RHINELANDER'S Bleach Plant which has been expanded showing an IMPCO washer in the foreground. There are two such washers.

THESE ARE TWO E. D. JONES & SONS CO. stainless tub 1500 lb. Beaters which are serving the new No. 8 Machine.



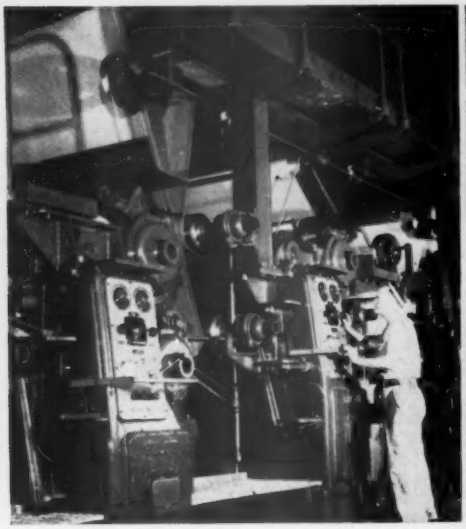
FOREST RESERVES

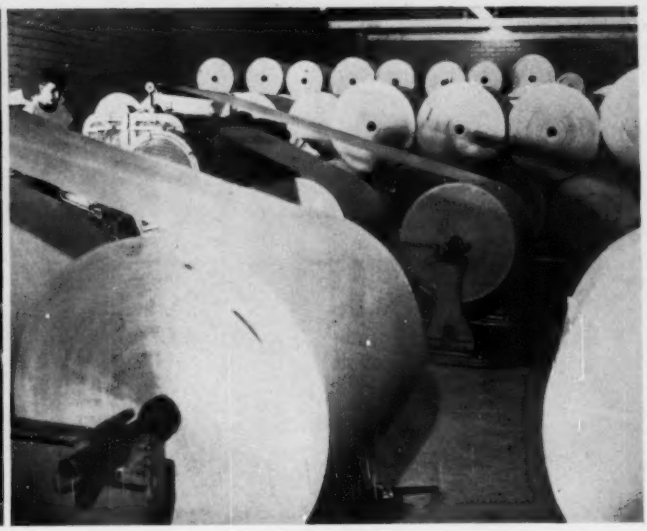
Puget Sound owns or controls extensive timberlands in the Pacific Northwest, and its operations extend from the felling of the trees to the final delivery of finished pulp. Every log is completely utilized; modern hydraulic barkers and chippers result in reducing waste in wood utilization by 20%, and wastes are fully utilized in the alcohol and by-products plants.

PUGET SOUND

PULP AND TIMBER COMPANY

BELLINGHAM • WASHINGTON





VIEW OF CONTROLS AT PRESS SECTION of No. 7 Beloit Machine (left). This was one of first of Beloit's new enclosed diaphragm loaded presses with close press spacing and has two suction presses.

AT RIGHT—A view from an intriguing angle in the big Rhinelander Finishing Room.

with one suction press, two straight presses and a reverse press.

No. 8, like No. 7, embodies recent design advances in the drier sections. Driers in both machines are 48 in. diameter and post-type drier frames are used. The Big Swede has 36 in. overhung driers. All three machines have size presses in the drier section. Beloit Centerwind reels are at dry ends of 6 and 7, but 8 has a new three-drum Beloit revolving reel.

It has motor-driven felt stretchers besides the power operated devices which contribute to easy running of the Ripco Maid, too—such as electrically operated deckle lift and air-motor driven Fourdrinier remover speed wire stringing; resilient air-controlled press loading; electric belt shifters energized from front side controls with clear view of draws, and brakes, calender lifts and slack take-ups all easily operated from machine tending side.

Stowe-Woodward Inc. again did roll-covering for No. 8. It covered the bottom suction press which runs with their Staprene top press roll. One red Stonite-covered roll is over a rubber roll in the second press. A Microrok-covered roll is over a rubber-covered roll in the third press, another Microrok roll over a rubber roll in the reverse press, and a third Microrok over rubber in the size press. Stowe-Woodward rubber-covered some 34 other table rolls.

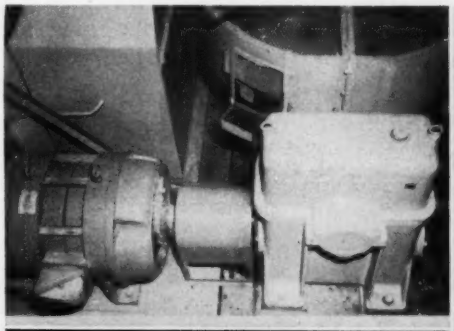
Power Plant

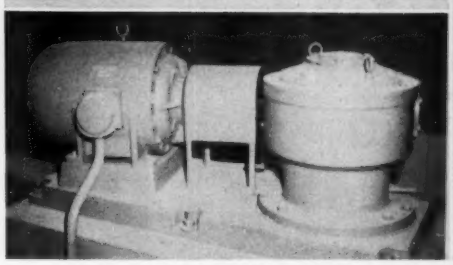
The new electric power generating plant has a Westinghouse turbo-generator installation in an entirely new and most impressive and attractive turbine building. It is the largest industrial turbine in Wisconsin and reportedly power is distributed at higher voltage than in any other paper mill. A 12,500 kw. generator produces power at 12,500 volts and is driven by a 10,000 kw. rated 400 lbs. steam turbine having 125 lb. and 15 lb. extraction stages and full-size condenser of 13,000 sq. ft. This unit replaces three older turbines, one of which was a standby.

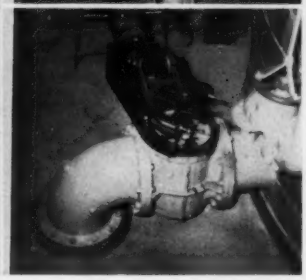
Additional power will be supplied by an existing 4,000 kw. 480 volt turbine moved to the modern new turbine room. This operates with a hot condenser for production of hot water for mill processing.

As a result of generating power at 12,500 volts, it was necessary to install an entirely new electrical distributor system to replace the 440 volt system in existence. Power is distriibuted at 12,500 volts from turbine room to light load centers located strategically throughout the mill, where it is stepped down to 440 volts to feed departmental circuits.

Brown Instrument Division of Minneapolis-Honeywell Regulator Co. supplied a turbine room control panel for steam pressure and temperature, oil and water temperatures. Bailey instruments control







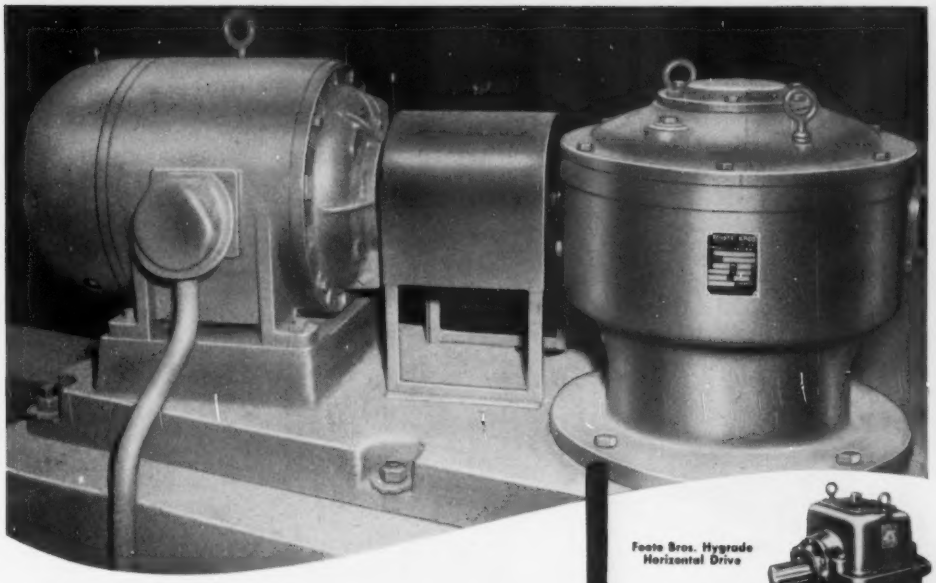
FOUR MORE VIEWS in Rhinelander's expanded Bleach Plant:

Top left: DELAVAL Gear assembly for Agitators in Bleach Tank, installed over year ago;

Top right: One of STEBBINS SEM-TILE tanks in Bleach operations.

Lower left: FOOTE BROS. Gears on Chlorinator Agitators.

Lower right: Another DEZURIK air operated valve of different type.



low-cost power transmission

IN THE PLANT OF THE RHINELANDER PAPER CO.

Dependable, low cost service is assured the Rhinelander Paper Company with Hygrade Worm Gear Drives installed on the agitators in the bleach plant.

Packed with power, built for rugged service, the compact Foote Bros. Hygrade Drives are engineered for quality performance. Ratios up to 4108 to 1 — higher if desired — available in horizontal and vertical designs. The Hygrade Hytop is designed to accommodate long, unsupported output shafts . . . upward, downward or both.

When there's a speed reduction problem, there's a Foote Bros. Drive to give the ideal solution.

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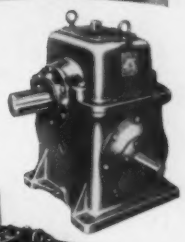
Better Power Transmission Through Better Gears

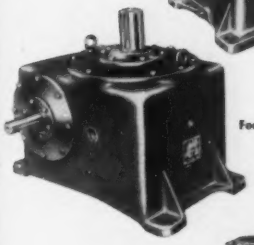
Foote Bros. Line-O-Power Drives

Foote Bros.-Louis Allis Gearmotors

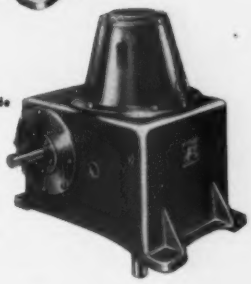
Foote Bros. Maxi-Power Drives



Foote Bros. Hygrade Horizontal Drive



Foote Bros. Hygrade Vertical Drive



Foote Bros. Hygrade Hytop Drive

Foote Bros. Gear and Machine Corporation
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Please send me Bulletin HGB containing full information on Foote Bros. Hygrade Drives.

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Dyes are end-products of very complex organic-chemical reactions. Quality control of finished dyestuffs can be achieved only by carefully-established procedures, the use of modern instrumentation and skilled technical-personnel.

As a valuable adjunct to visual evaluation of dyeings, National makes extensive use of modern instrumentation to establish standards and to check raw materials, intermediates, color solutions and actual dyeings.

Consider, for instance, Niagara Sky Blue 6BP shown here.

Quality of the Naphthalene used as a raw material to prepare SS Acid is established by running a spectrophotometric curve of Infra-Red absorption (A) to standardize its purity and concentration. Then, a curve of the Ultra-Violet Absorption (B) run on the resulting SS Acid verifies its quality. Separately, an Ultra-Violet Absorption curve on Dianisidine Base (C) determines the quality standard of this intermediate.

Coupling these intermediates produces Niagara Sky Blue 6BP, on which four-way quality controls have been set up, viz: Spectrophotometric curves of Ultra-Violet Absorption (D); Infra-Red Absorption (E); Visible Absorption (F) on dye solutions; and finally a Visible Reflectance Curve (G) on actual dyeings. This is in turn translated into a series of standard coefficients (H) for this color.

When you establish a formula based upon National Sky Blue 6BP (or any other National dye) you can be sure that subsequent shipments will duplicate the original in quality, strength and tinctorial value just as closely as modern controls can achieve. So, to be sure of uniformity always specify

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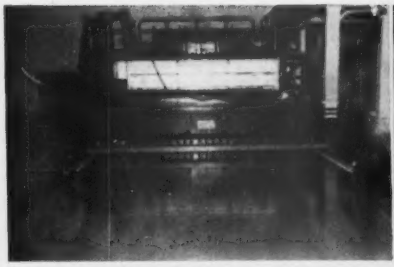
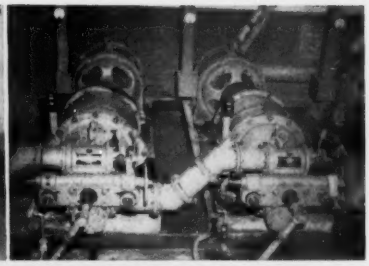
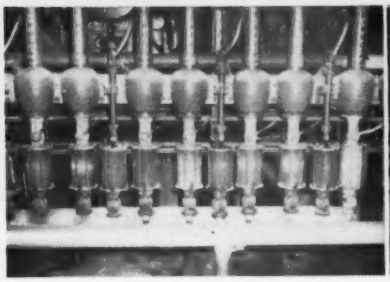
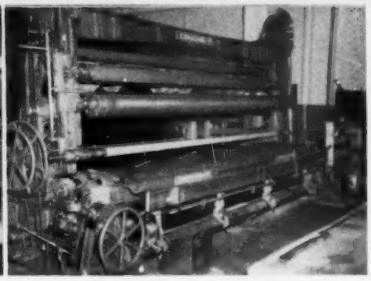








SERVING NO. 7 MACHINE at Rhinelander Paper Co.: Top left: VALLEY IRON WORKS Headbox and Inlet and Adjustable Slice (for 182 in. Machine).

Lower left: BIRD MACHINE CO. Dirtecs on No. 7 Machine.

Top right: Just two of many MORDEN STOCK-MAKERS in this Mill, and most of them are No. 7. There are 9 Mordens on No. 7, 8 on No. 6 and 5 on new No. 8.

Lower right: A No. 17 CAMERON MACHINE CO. Winder for No. 7, is larger than the Cameron following No. 8, shown in another picture.

RHINELANDER SUPERINTENDENTS—LEONARD PARKINSON (left), Paper Mill Superintendent, and SIGGE EKMAN (right), Sulfite Superintendent.

flows.

The new steel and masonary turbine room is faced inside with glazed tile of two shades and operating floor is finished in buff tile. For safety distinction, all switch gear are in jade green and turbines and generators in complementary color.

Along with PULP & PAPER's own photographs of many new installations at Rhinelander, we are pleased to present in this issue a fine photograph of the turbine room taken by a Rhinelander amateur cameraman, Nils Becker, of the personnel department, and son of Gustav Becker.

Semi-chemical Plant

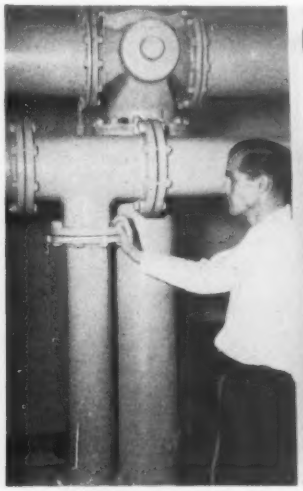
This is the major 1952 project at Rhinelander and is the culmination of years of experimental work headed up by Dr. Karl Fries, the technical director. In the March 1952 issue (page 78) PULP & PAPER published the report by Dr. Fries which revealed for the first time that it was not only possible, but desirable, to use aspen semi-chemical for glassine grades. Rhinelander's research went back to pre-war and it received much valuable assistance from the U. S. Forest Products Laboratory at Madison, Wis. Rhinelander will be the first mill to use semi-chemical pulps for glassine, like several book mills finding it suitable for higher grades than was thought possible for many years.

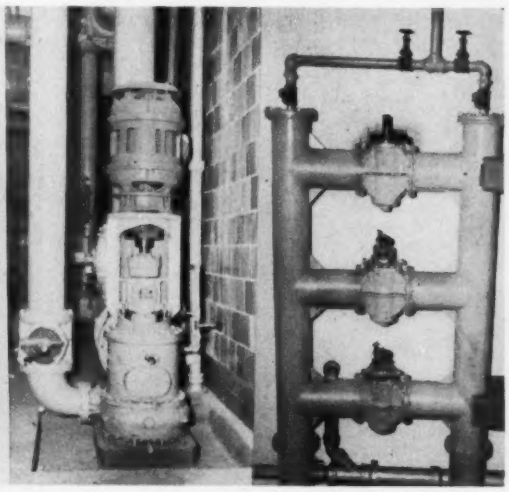
The Rhinelander plant will make 40 tons a day, which, after bleaching, may be mixed up to 50% with the Mitscherlich type sulfite pulps for glassine. It will be a neutral sulfite process and two 16 ft. mild steel rotary digesters by Ohio Machine & Boiler Co. of Cleveland will be capable of three cooks a day of aspen or poplar chips. Two Leach casters are Rhinelander-designed and built. Link-Belt will supply conveying equipment. Key units will be three of the large model No. 410 Bauer Bros. Pulpers, each driven by two 250 hp. motors, and especially built for Rhinelander by the Bauer firm.

Rhinelander-made brown stock chest and Impco valveless filter are other major equipment for the semi-chem process.

Bleach Plant

The bleach plant, expanded as recently as 1949, will be expanded again from about 80 to around 115 tons bleached product capacity to handle the semi-chemical pulp





VIEWS IN RHINELANDER'S BLEACH PLANT, modernized and expanded in 1949. Left to right:

CRANE CO. valves and fittings, extensively used throughout the mill with good service records, (these being fairly new installations); IMPROVED PAPER MACHINERY CORP. bleach stage washer;

GOULDS Vertical Pumps like this one in Bleach Plant, also are in Paper Mills—four new ones on No. 8 Machine, and one on Pulpmaster;

DEZURIK SHOWER CO. provided air-operated three-way and two-way valves for stock lines.

GENERAL VIEW of Rhinelander's No. 7 Machine —RIPCO MAID it was named—which started up in Fall of 1949. Made by BELOIT IRON WORKS it is 182 inches and in other ways is similar to the BIG SWEDE, which came into production in Dec. 1941. This machine, like others, has VALLEY IRON inlet and headbox, and ROSS ENGINEERING hood and air system. This article compares the three new machines of Rhinelander's past decade.

and this process will bring the pulp yield from aspen down to about 70%, still high enough and important in the use it makes of the species formerly regarded as a weed wood.

Two Impco washers and two Chemtile constructed Fletcher bleachers at intermediate stage are being added to handle the extra tonnage.

As completed in 1949, the bleach plant doubled Rhinelander's bleaching capacity. Improved Paper Machinery Co. washers and Stebbins Semtile lined tanks and chests are among principal units in the plant. For the chlorination stage there are three tile tanks and there will be four tanks in all for the Fletchers. Below are tile lined drop chests and washed stock chests, as well as a chest for purchased pulps which may have to be bleached.

Crane Co. and Lunkenheimer valves and fittings up to 14 inches are used extensively in the bleach plant. DeZurik valves include hydraulically operated 3-way valves at the base of each chlorinator, as well as hand-actuated DeZurik 3-way valves in the overhead section at chlorinators.

Gould's chlorinator pumps have a 700 gal. rating and on stock chests an 1800 gal. capacity. Foote Bros. Gear & Machine Corp. provided Model 10 HGV gears to turn agitators supplied by Nekoosa Foundry & Machine Works of Nekoosa, Wis., which are stainless steel for chlorinators; bronze and neoprene covered for Fletchers.

The Impco washers are 8x12 ft. and rotary vacuum filter operated. Main drive is through Link-Belt size V-5 P.I.V. reduction units.

Other Installations

Other installations in recent years at Rhinelander:

Two Bird Machine Co. Jonsson screens handling 45 tons each per day and completing the system which enabled Rhinelander to put three kinds of spruce pulp—direct, indirect, and Mitscherlich cook—through one system including bleaching.

The E. D. Jones Model 3 Pulp-Master augmenting capacity for handling broke for glassine with a No. 6 Gould's 750 gal. pump serving it.

Eight Model HA-35 Morden Stock-Makers for No. 7 machine.

A Dorr Co. filter system and settling basins giving the mill a rating of 33,000,000 gals. a day of water at retention period of three hours. Two Dorrco Type T flocculators and two Dorrco Type F flash alum mixers are in the filter room. A new intake pump house was built.

A Babcock & Wilcox boiler with superheater and B & W return bend economizer, and water-cooled front, side and bridge boiler walls were also included in expansion since 1946. Boilers 2, 3 and 4 were revamped by putting in super beaters to make them comparable to the new boiler and the system provides now up to 300,000 lbs. of steam per hour. A new stack, 200 ft. high, also was erected.

A new American Pacemaker roll lathe, for turning rolls, supplied by American Tool Works, Cincinnati.

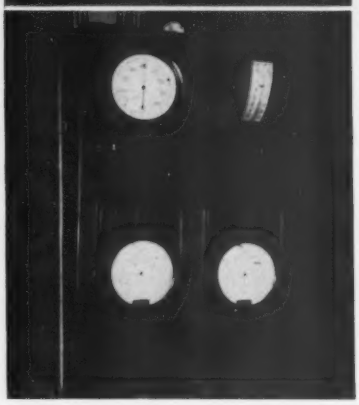
And among most recent additions, the first installation anywhere of the Morden Slush-Maker, described in our No. 1951 issue, which breaks up broke, trimmings and pulp slabs at the rate of 1500 lbs. in 20 minutes. It is hooked into three chests, broke for No. 1 and No. 2 machines and purchased kraft pulp for both machines which often comes as dry as hardboard. The second Morden Slush-Maker is now operating on No. 3 machine.

By-Products Division

Any report on Rhinelander expansion and growth must take this comparatively new division into account. It began when Rhinelander bought the waste liquor torula yeast plant which had been operated

HERE IS ANOTHER NEW VIEW of fine new turbine room at Rhinelander Paper Co., which shows the largest industrial turbine in the state of Wisconsin provided by Westinghouse Electric Corp. The new installations at Rhinelander provide one of the highest voltage distribution systems in the entire paper industry anywhere in the world. Instrumentation shown in this picture is by Brown Instrument Div. of Minneapolis Honeywell Co.

MEN OF RHINELANDER: ALAN PRADT (left), in Charge of Products Promotion and Advertising, and GUSTAV BECKER (right), Converting Division Manager, Rhinelander Paper Co. Mr. Becker's son, Nils, of the Mill staff, took the cover picture of this issue for PULP & PAPER—a view of Rhinelander's big new turbine room.



ABOVE—THE NEW STACK at Rhinelander. And Below—Control (HAGAN CORP.) panel for No. 5 Boiler, in entire boiler unit furnished by Babcock & Wilcox.

R. W. REED, new technical director, Rhinelander Paper Co., took his BS degree at Univ. of Rochester in 1937; took advanced training at Inst. of Paper Chemistry receiving PHD in 1941. He was technical director to paper mills for Eastman Kodak Co. and later paper consultant to the Ozalid Division of General Aniline and Film, after which he joined Rhinelander.

Dr. Fries, who has been technical director, will be assigned to special work.

by the Wisconsin Sulfite Research League. Now it has taken over the old turbine room, too, for a liquor evaporation plant. A General American Transportation Rosenblad type Conkey 4-body triple effect evaporator which will process liquor to a dry powder or to a state for burning is the most important addition and it was expected late this year. It will handle S. W. L. direct from digesters or the effluent of the 50% which now goes through the yeast plant. It is contemplated that the dry powder may be developed into commercially useable products.

Meanwhile, new German equipment has been added in the yeast plant which upgrades that product and opens new markets for it for human consumption after it passes rigorous pharmaceutical standards. Heretofore, the yeast has been sold for stock and poultry food. It is operating in its fourth year and a great deal has been learned in regard to production as well as marketing. In the past year a new dog food market was opened up, working off a backlog of six months' production —600 tons of yeast.

Sulfur Savings

And, finally, steps at Rhinelander to save sulfur now in short supply, are important, too. Liquor drained from Mitscherlich type digesters passes to a separator where SO_2 flashed will be passed through a condenser and noncondensed gases will be introduced to a recovery tank by means of a stainless steel eductor. Stripped waste liquor can be accumulated to pad blowpits and supply evaporation and yeast processes.

Needless to say, Rhinelander Paper Co. is an outstanding example in the industry of progress in operations, technical respects, management and sales aggressiveness. As the new machine was coming in last winter, there were no less than 100 different construction projects on the docket at one time!

FATHERS AND SONS IN RHINELANDER

Several years ago PULP & PAPER ran a story reporting how many sons of leading executives of Rhinelander Paper Co. had followed their father's footsteps by joining the company and seeking careers in the northern Wisconsin industry.

Louis J. McNamara, the veteran director of industrial relations at Rhinelander, suggested that we had hold of the tail of a much bigger story than the one we told. In the whole company, he pointed out, there are now no less than 70 father and son combinations!

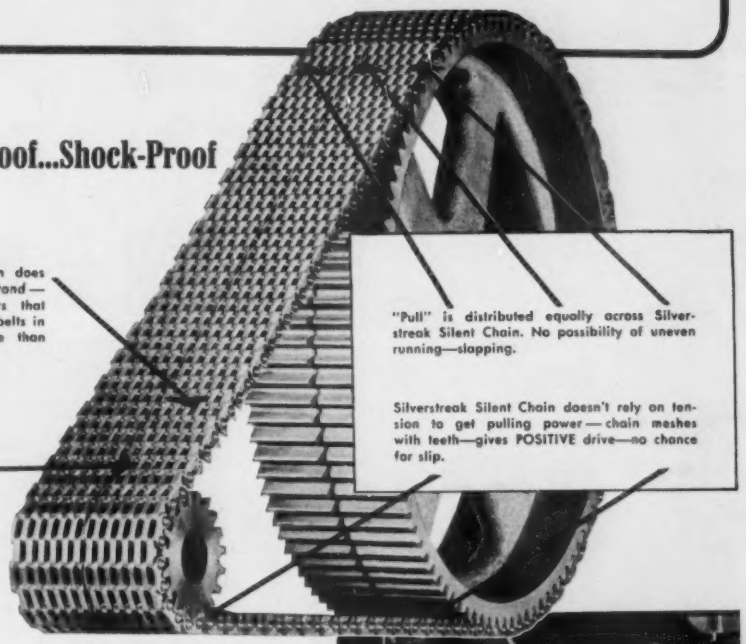
In five cases, the father has three sons in the mill. Four of these families are shown in pictures published with this story. In five other cases there are two sons working with their father. These are combinations totaling 160 fathers and sons in a company of 1,165 employes—therefore there is a high percentage of such combinations.

President Folke Becker himself sets the pace—or, we should say, his son does. His son, John, is in the sales department. He was a 2nd looie in the army in World War II.

Folke's brother, Gustav Becker, converting manager, has his son, Nils, in the industrial relations and personnel department. An amateur photographer, Nils took the picture with his own camera of the

High-speed, high-hp power transmission is an old story for Silverstreak Silent Chain Drives

Slip-Proof...Slap-Proof...Shock-Proof

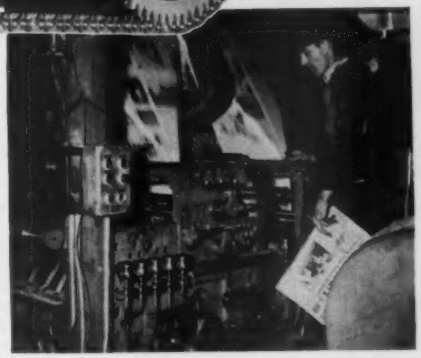


YES, for many years Link-Belt Silverstreak Silent Chain has been the accepted solution for the toughest transmission problems. These time-proven drives stand up under long years of high-speed, high-hp service . . . maintain their efficiency (over 98%) with virtually no attention.

Check the Silverstreak advantages shown here. See for yourself why so many concerns that must combine top transmission efficiency with unfailing dependability—standardize on Link-Belt Silverstreak Silent Chain Drives.

LINK-BELT

SILVERSTREAK SILENT CHAIN DRIVES



For 12 years, six 100-hp, 4700 f.p.m. individual Link-Belt Silverstreak Silent Chain and two-speed Herringbone Gear Drives at the Miami Daily News have served effectively, maintaining accurate register with minimum maintenance.

LINK-BELT COMPANY: Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa), Sydney (Australia). Offices, Factory Branch Stores and Distributors in Principal Cities. 10,700

THERE ARE 70 FATHER-AND-SONS combinations working in Rhinelander Paper Co. Here are five combinations of three sons and a father. From top to bottom:

Top: SUMMERS FAMILY (l to r): Robert, John (father); James and William.

Second row: SACHSE FAMILY (l to r): Robert, Harold, Lawrence and Alvin (father).

Third row: HUBER FAMILY (l to r): Louis Sr., Louis Jr., Gene and Francis.

Fourth row: POSPYCHALA FAMILY (l to r): Martin (father), Sylvester, Edward and John.

Fifth row: ZETTLER FAMILY (l to r): Raymond, Louis (father), Victor and Donovan.

new Rhinelander turbine room which is published on the cover page of this issue.

Mr. McNamara's own son, M. J., is in Rhinelander sales at Richmond, Va., after serving 15 months as a lieutenant junior grade in Korea, and he also served as an ensign in the Pacific theater in World War II.

It should be noted also that Charles C. Johnson, son of the late "Stub" Johnson, Rhinelander's former chief operating engineer, also is in Rhinelander sales in Kansas City. He was in the army air corps. And son of the late Lewis Dozier, former paper mill superintendent, is in the industry—though not with Rhinelander—for he is in a mill in Kalamazoo (Sutherland) as a supervisor, where he went after serving as a tank captain in the South Pacific.

Fathers-and-three-sons combinations at the mill are the Hubers, Louis, Sr., Louis Jr., Francis and Gene; Martin Pospychala and Sylvester, Edward and John; Alvin Sachse and Harold, Lawrence and Robert; John Summers, and James, Robert and William; and Louis Zettler and Donovan, Raymond and Victor Zettler.

DR. KARL W. FRIES (left), Technical Director, Rhinelander Paper Co., and JESSE HOLDERBY (right), Manager of By-Products Division (torula yeast and other by-products).

RANDOM SHOTS AT RHINELANDER—It was no problem finding these men around the mill almost any time (l to r): SOPHUS (Soph) JOHNSON, Chief Mechanical Inspector; LOUIS McNAMARA, Director of Industrial Relations, and A. W. LEUPOLD, Vice Pres., C. R. Meyer & Sons Co., Oshkosh, Wis., general contractors for expansion carried on at Rhinelander over several years.

Organizational Changes

Rhinelander Paper Co., has recently made some organizational changes in connection with its new Sulphite Evaporation plant now nearing completion. Mr. Charles G. Schultz, who formerly was Assistant to the Paper Mill Superintendent, is taking on the job of operating this plant. His title will be Supervisor of Evaporation Plant Mr. Schultz will report directly to Mr. J. M. Holderby, who is Manager of the By-Products Division.

Mr. John Kay is being promoted from Industrial Engineer to Assistant Paper Mill Superintendent and will report directly to Mr. Robert Kennedy, who is Senior Assistant Paper Mill Superintendent. Mr. Lecnard Parkinson is Paper Mill Superintendent.

SEE PAGE 3 FOR INDEX
To Articles in This Issue

NEW ADDITIONS MADE IN HOQUIAM, WASH., MILL OPERATIONS

RAYONIER'S IMPROVEMENTS

To improve quality and increase paper Production, Rayonier Incorporated has completed two improvement projects in the Paper Mill at the Grays Harbor Division, at Hoquiam, Wash., at a cost of more than $110,000.

The new high density stock pump in the beater room replaced a screw conveyor for filling beaters which was part of the original mill installation in 1929. Furnish for the 202 in. Fourdrinier now goes through a new Valley headbox which replaced an old copper-lined wooden headbox also installed in 1929.

High Density Pump

Stock for the eight E. D. Jones & Sons beaters is now delivered through 14 in. stainless piping with remote controlled valves. Shartle Bros. Machine Co. supplied the A/R bronze pump, valves, and electric control panel.

The pump was designed to deliver stock up to a maximum consistency of 12% but is currently used to deliver 6-8% stock at 500 GPM against a 110 ft. head. The 75 HP pump motor and controls was supplied by General Electric.

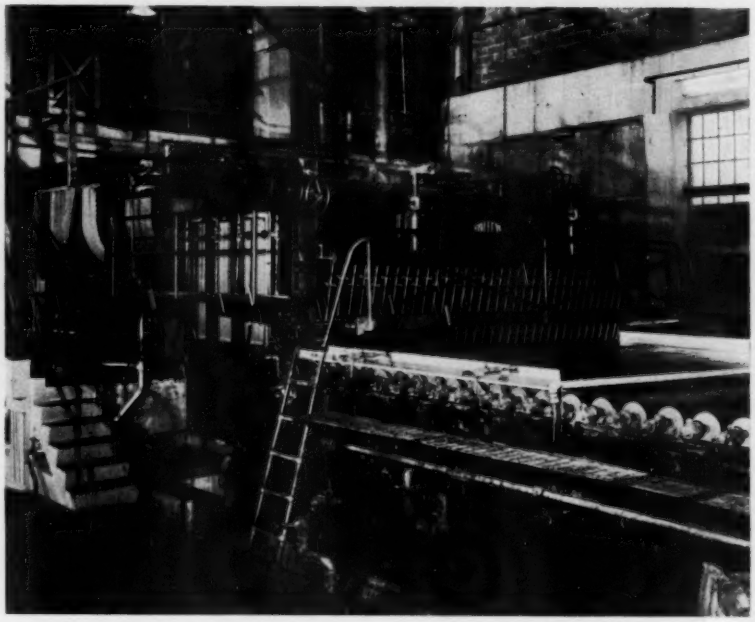
Beatermen now control the flow of stock to the beaters from a central control panel conveniently located in the beater room. Shartle Bros. Machine Co. supplied the panel which was wired at the time of installation.

Headbox

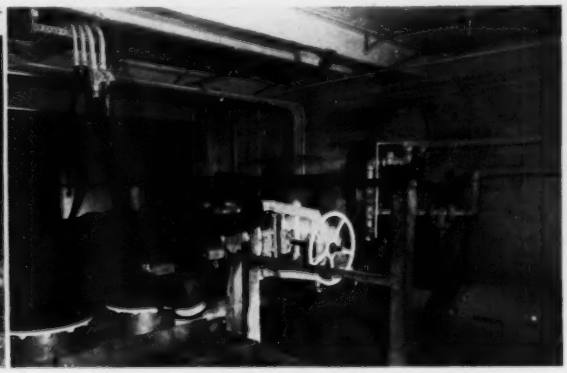
The installation of the new headbox necessitated raising the three existing Bird Machine Co. screens about 20 in. and Isaacson Iron Works of Seattle supplied a partially prefabricated steel foundation for this purpose. A newly installed submerged flow inlet to the screens was built by the Bird Machine Co. Another addition supplied by Arthur W. Forsyth Co., Seattle, was a set of three flanged Flexible Valve Corp. pinch body valves to control the flow of stock to screens. New stainless piping for both the headbox and beater filling system was supplied by the Alaska Copper & Brass Co. of Seattle.

Stainless steel was used throughout in the new headbox, inlet, manifold and screen gathering box which were built by Valley Iron Works, Appleton, Wis. All structural members supporting the stainless box are Lithcoated and welded to the box. The inlet has a 12 in. diameter headless roll with internal rectifying discs on 3 in. centers. In the headbox the driven distributor roll has rectifiers on 6 in. centers. The whole headbox installation is completely adjustable and designed to handle any required consistency up to a maximum machine speed of 1000 feet per minute.

To get the bulky new headbox into the paper machine room required removing a section of the west wall.



VALLEY IRON WORKS HEADBOX and new stainless steel inlet equipment for 202 inch Fourdrinier Paper Machine at Rayonier Inc., Hoquiam, Wash. This quarter view shows slice adjustments and other adjustments on front side. This machine makes sulfite bond papers.



AT RAYONIER'S GRAYS HARBOR DIV., Hoquiam —Left View: GENERAL ELECTRIC controls with SHARTLE BROS. control panel for flow of stock to eight E. D. JONES beaters. ALASKA COPPER & BRASS CO. (Seattle) supplied stainless piping in background, carrying stock to beater. View at Right—NEW HIGH DENSITY SHARTLE STOCK PUMP, shown on right, is driven by GENERAL ELECTRIC motor. Delivers stock to beaters. On left are pair of remote controlled electric valves which control stock flow.

Raylig—Rayonier Product—Uses Being Developed

One of the activities of Rayonier in the Grays Harbor area which has drawn considerable favorable attention from the press and local officials is its "Raylig" plant. Quite a number of mills in the sulfite field this summer are concentrating their waste liquor for a road binder, dust-settler, or other uses, it being done in Oregon, Wisconsin, Ontario and in the Northeast. Of course, in no cases, can it be a way to dispose of any great proportion of the liquor from any one mill, unless many more markets are opened up and large plants become feasible.

The waste liquor at Hoquiam is evaporated from a volume of 6 gals. to one gal., neutralized chemically and stabilizers are added if it is to be shipped any distance. The plant actually was built in 1948, though production was only stepped up in recent years.

Some of the Raylig is sold to manufacturers of linoleum paste and research is aimed at finding more customers. Of course, most of it is for roads. Deliveries have been made as far as Southern California, also north to British Columbia, shipped by leased tank cars. The $100,000 plant was developed by Rayonier's own chemists and engineers.

The Raylig production process basically involves heating the sulfite waste from the pulp mill, evaporation until the solution is of proper concentration then neutralizing the concentrate to remove the acid characteristics of the liquor.

The solution is evaporated until it reaches a concentration of 50 percent solids, with wood sugars making up much of the solid. When used on roads, Raylig is diluted to a 25 percent solution. The 50 percent concentration is made at the plant to reduce shipping costs. It is the wood sugars in the concentrate that form the binder to settle highway dust.

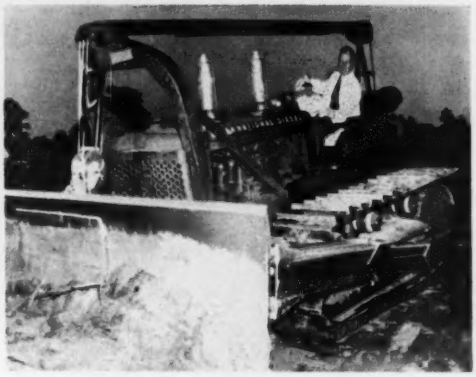
If the shipment is to go any distance, sodium pentachlorophenate is added to prevent bacteria growth in the solution. This does not have to be done if the Raylig is to be used immediately.

VIEWS IN SMALL PLANT at Rayonier Inc., Hoquiam, Wash., which makes Raylig for dust-settling and other uses by concentrating a portion of mill's waste sulfite liquor. From left: First, the pilot plant with Power Plant behind it. Second, Heater set-up which starts the Raylig process. Third, Intricate piping handles solution which is concentrated in process. Fourth, Foxboro control board shows automatic operation. Drums seen below this board contain Dowicide G—sodium pentachlorophenate—used to control bacteria if solution is stored or shipped long distance.

Rayonier Buys Timber

CLYDE B. MORGAN, president of Rayonier, Inc., made a trip West from New York in June to sign a $6,473,000 contract with the U. S. Indian Service for purchase of 614 million feet of timber on Quinault Indian Reservation in western Washington. In this picture, first to sign contract was Cleve Jackson, chairman of the Quinault Tribal Council. Witnessing his signature, left to right: Mr. Morgan, M. B. Houston, assistant to the President of Rayonier, Seattle; J. R. Petrie, Indian Service and Raymond B. Bitney, Superintendent of the Western Washington Indian Agency.

Mr. Morgan said that this timber would virtually assure Rayonier at Hoquiam, Washington a perpetual supply of wood. A large proportion of the timber is hemlock, with some spruce, Douglas fir and cedar. Sawlogs would be traded with Grays Harbor firms for pulp logs.



In keeping with the high pitched tempo of modern industry, Clyde B. Morgan, president of Rayonier, Inc., mans a bulldozer instead of the traditional shovel as he breaks ground for the company's $25,000,000 chemical cellulose plant to be built at Doctortown, Ga., and in operation by 1954.

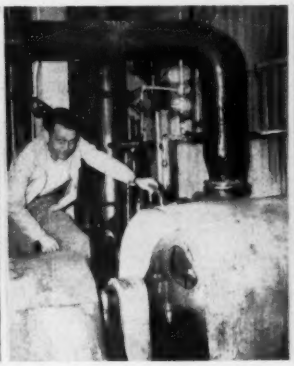
First Alberta Sulfur For Canadian Mills

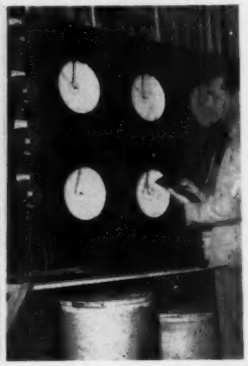
First shipments of sulfur for British Columbia pulp mills from Alberta—a new source developed by Powell River Co. in partnership with Shell Oil Co. at Jumping Pound—arrived at Vancouver, B.C., in June and were allocated among Powell River Co., Pacific Mills and Alaska Pine & Cellulose mills.

The sulfur is being shipped to the coast by railroad in eight-car lots totalling 450 tons, the equivalent of a barge load, every 21 days. It is planned to ship 4500 tons this year to the mills at Powell River, Ocean Falls, Woodfibre and Port Alice, and it is estimated that the Alberta plant which extracts sulfur from natural gas, will supply about 50% of the industry's requirements in British Columbia.

Newsprint Capacity

Canadian newsprint capacity this year is 5,510,397 tons, or 151,000 tons greater than in the previous year and 870,000 tons greater than in 1946, according to Newsprint Association of Canada. The 1951 production of newsprint in Canada, for which complete figures are now available, was 5,516,279, or 54% more than in 1945.





THE COATING CASE

WHAT DOES MILWAUKEE DECISION MEAN ?

A great deal of misunderstanding was prevalent in the industry in recent weeks as a result of sensational stories and reports arising out of the memorandum decision of Judge Robert E. Tehan, of the United States District Court, Eastern District of Wisconsin, in the case of Consolidated Water Power & Paper Co. and Peter J. Massey vs. Kimberly-Clark Corp.

As a matter of fact, Judge Tehan of Milwaukee still has not handed down a formal opinion in the long-standing legal case involving a basic machine coating patent, which, as a matter of fact, already has expired. Much of the material publicized included charges excerpted from lawyers' briefs. While his memorandum decision was in favor of Kimberly-Clark over Consolidated and the inventor of the basic patent, Peter J. Massey, of Chicago, Ill. (now consultant to H. P. Smith Paper Co.), the court said it would come to the opinion at some future time.

Meanwhile, Consolidated has instructed its attorneys to appeal the decision as soon as the lower court enters the final order and to expedite the hearing of an appeal.

The case only affects these two companies and a possible payment of money by Kimberly-Clark and could have no effect on the operating and other practical patents for machine coating which are in effect today. Any paper companies which have any doubts as to the effect this may have on them if they are makers of machine coated papers, can quickly clear up any question by consulting their own attorneys.

Even before the briefs in this case were set down for oral argument in the Milwaukee court, and after the case was filed, the single basic patent involved had expired.

This was U.S. patent No. 1,921,368 which expired August 8, 1950. This was the customary 17 years after its going into effect—it has been that many years and longer since P. J. Massey went to Wisconsin Rapids and found a willing listener and an enthusiastic support in President George W. Mead of Consolidated, now retired, to introduce his high speed machine coating process which made it possible for this industry to meet the demands for huge production of coated papers for the slick paper magazines just then beginning to build up their vast circulations. Incidentally, this is one division of the paper industry still producing at top peaks with strong demand for its products.

Consolidated owns many additional unexpired coating patents not involved in the litigation. These unexpired patents have to do with the machinery used, the coating composition, and other phases of development. Some of the other companies which entered the field likewise have patents.

The patent which expired, and which is involved, is of course, open to the public now, as it has been since late 1950.

It may be stated unequivocally that the final decision in this case, which may not come for a year or more, will have no possible effect on any current matter in the machine coating field or on any other patent.

The appeal in this Milwaukee case will be heard before the Circuit Court of Appeals in Chicago. Most lawyers will probably agree that there is little likelihood of any further decision in this case for about another year.

Word reached this country that a foreign machinery manufacturer has jumped to the erroneous conclusion that the Milwaukee decision wiped out all foreign and other patents. Certainly, this is far from the facts in the case, and the decisions in the U.S. could not have any effect on other machine coating patents held by Consolidated and other companies in Canada, England or other countries.

First GATX Evaporator Sections at Rhinelander

The first delivery of a portion of the new Rosenblad station switching type GATX Conkey plate evaporator has been delivered to Rhinelander Paper Co. It was a carload delivery on June 24 and two more deliveries in the next several months will bring to Rhinelander, Wis., the first of the commercial scale evaporators to concentrate sulfite waste liquors for burning or other use.

Because of stainless steel shortages, mills have been unable to carry out state orders to dispose of the liquor with these plants and the orders for evaporators have been long delayed. The one at Rhinelander is a 33,000 lbs. per hr. evaporator made at Sharon, Pa., and will process half of the mill effluent, the other half now going into the yeast plant. At Appleton, the pilot GATX and pilot Struther Wells evaporators are still being tested. At least two mills are undecided as to which they will adopt in their proposed plants.

Corrugated Boxes

Martin Paper Products of Winnipeg and Calgary will build a $500,000 corrugated box plant at Edmonton, Alberta, according to President D. A. Hindle. Production at the plant will be started during the coming autumn.

Power Retires As Head Of Nekoosa Foundry

Mike Power, who was co-founder 34 years ago with the late Henry Fitch of the Nekoosa Foundry & Machine Works, Nekoosa, Wis., retired as president of the firm on July 1. Ted W. Olson, his son-in-law, succeeds Mr. Power as president and the latter becomes board chairman.

Mr. Power holds a number of patents on bark presses, wood splitters and peelers and a collapsible shaft. Born in Toronto in 1871, he settled in Nekoosa in 1903 and was former master mechanic of Nekoosa-Edwards Paper Co. Mr. Olson has been with the company since 1929 and has been executive vice president.

Silver Linings are Turning Up

A tour through the important and broad Middle Western area of this has found business picking up again in many mills. A recession that had been foreseen by everyone and felt by virtually all business activity, made few exceptions of this industry. But one notable exception was the segment of this industry engaged in making magazine and printing papers. There was no appreciable let-up in this field and some others weathered the storm very well.

The containerboard field was one of the first hit and longest hit, but it has been coming back. The same may be said for some of the tissue and other fields. Mills found a way to take up the slack more comfortably by shutdowns of varied length during and after the 4th of July holidays. Many mills were down for a week or two, but this only served to take care, in one swoop, of the required vacation periods under the labor contracts. Many mill executives said it was easier that way than staggering vacations through the year and trying to keep up production.

The happy thought in most minds now is that the worst is over.

Another Newsprint Plant Proposed

John Murdock, Montreal industrialist, has proposed to Quebec Premier Maurice Duplessis a plan for the building of a newsprint mill at St. Felicien, Roberval County, Quebec. Although Duplessis has opposed the policy of more mills because of full utilization of the forest potential, he has indicated that the Murdock project may be an exception.

Strathmore Honors

Members of the 25-year club of Strathmore Paper Co., 210 in number, were guests of honor at a banquet held in West Springfield, Mass. Gold service pins were awarded to 10 new members of the club and a gold watch to John D. Naylor, who had completed 50 years' continuous service with the company.

Barks all pulp woods Economically!

THIS BARKING UNIT produces cleaned logs on a true production basis at a low overall cost. Southern pine is now being barked successfully at a rate of 7850 lineal feet per hour. Reasonably round, straight oak, ash, gum, hackberry and cottonwood logs are being processed at over 5000 lineal feet per hour!

YOU GAIN THESE ADVANTAGES WITH THE IMPROVED *STREAMBARKER*

1. Fast continuous hydraulic barking.
2. Barks all species of wood.
3. Cleaner logs — dozy wood, imbedded dirt, cinders and fly ash are easily removed.
4. Low wood loss — hydraulic pressures can be varied.
5. Handles logs 4 to 8 feet in length and 4 to 24 inches in diameter.
6. Only 4% increase in bark moisture.

Two Streambarkers are used in hydraulic barking of aspen logs in this midwestern aspen strawboard plant.

3749

Get complete information on the improved model D Streambarker *by contacting your nearby A-C representative—or write Allis-Chalmers, Milwaukee 1, Wis.*

Streambarker is an Allis-Chalmers trademark.

ALLIS-CHALMERS

CONVENTION REVIEW

NEWS NOTES FROM SUPERINTENDENTS' ANNUAL

NEW OFFICERS—Left to right—GORDON KEITH SINGLETARY becomes the twenty-ninth president of the Association; and the third one from the South; DONALD R. DICK, first vice-president; HARRY E. HADLEY, second vice-president; H. H. STREET, third vice-president; MARTIN AUCHTER, fourth vice-president; ALBERT E. BACHMANN, fifth vice-president.

The 1952 annual convention of the Superintendents' Association is now history. It seems a fair statement to say that during that middle week of June in the great motor city, the conclave itself ran a gamut like the weather did—from blazing hot to comparative coolness. As the delegates gathered in the Sheraton-Cadillac (which the taxi drivers and nearly everyone else in Detroit still insist on calling "The Book") the thermometer hit a blazing 97 degrees—hottest in three years' history for the city on the banks of the Detroit River, and it only gradually tapered off until on the morning of farewells after the annual banquet and final events of the convention, it was a fairly cool 48 degrees.

So it was, to some degree, with the convention. Some events drew a terrific amount of interest and participation, and other were not so well attended. The mill visitations were very low in number, and a matter of fact the attendance was off the records of recent years. There were about 100 actual operating men from the mills registered, and about three times that many salesmen and equipment and supply company representatives of various sorts.

There is no question of doubt but what the convention reached a really blazing high point when Allen Abrams, vice president and director of research for Marathon Corporation, rose to address the opening luncheon. Point by point, he offered evidence of how the United States has drifted away from the principles of the Declaration of Independence, and how the very things that are happening today are those which the signers of the Declaration declared themselves so strongly against. Mr. Abrams appealed to his listeners to "have the desire, the courage and the will to dedicate" themselves to the task of saving America from drifting into a state socialism.

At one point he said: "It is as though our neighbor's house catches fire. Having an antiquated water system, he calls on

ALLEN ABRAMS, Research Vice President of Marathon, whose speech was one of outstanding events at Detroit.

us to put out the blaze. Then, with the conflagration under control, we find that our own house is afire on the inside: Yet with a curious sense of generosity we continue to pour water on our neighbor's fire while our own home is in danger of burning down."

At another point he said: "Your own federal government, under the guise and protection of benevolence to its people, is putting over the greatest swindle of the ages. The U. S. is financially bankrupt. Every day we go into debt deeper by spending your taxpayers money to build a railroad on the African Gold Coast, to construct power dams in Indo-China, to build a commercial airport in Egypt, and of all things—to teach the South Koreans how to balance a budget. These and thousands of other projects which would exhaust you mentally, as well as financially. You have observed, too, that our country is moving rapidly to moral bankruptcy." Mr. Abrams' address was probably the most discussed of the convention.

Baseball Dinner

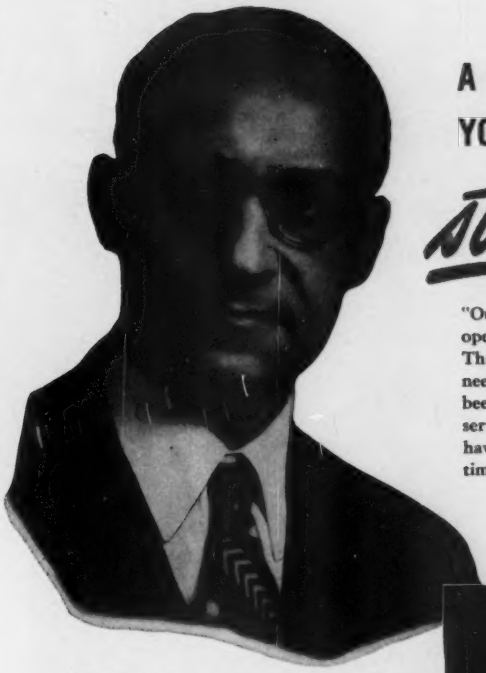
Something different and another highlight of the convention, was the Baseball Dinner, which was arranged by Norman O. Weil, assistant vice president of W. S. Tyler Co. Cleveland, Ohio, who lives in Yonkers but cheers the Yankees, and who might himself bear the appellation "Mr. Baseball" which he gave to one of the speakers. It was Mr. Weil who arranged the party, bringing to the dinner event Ford Frick, Commissioner of organized baseball; Casey Stengel, manager of the Yankees; Walter Briggs, president of the Detroit club; Bill Dickey and Jim Turner, coaches of the Yankee staff. An old Michigan state ballplayer himself, Mr. Weil was master of ceremonies, with the assistance of his daughter made gift presentations to his guests.

Perhaps the highlight of the dinner was an address by Mr. Frick, in which he deplored the paternalism of government and the philosophy that "the world owes everybody a living." He remarked that the federal government outlay of 72 billion dollars a year means the equivalent of spending 72 thousand dollars a day from the year 1 to today, with 700 years still to go!

New President

Gordon Keith Singletary, plant manager of Brunswick Pulp & Paper Company, Brunswick, Ga., became the twenty-ninth national president of the Association, and the third one to hail from the South. The others have been Bill Brydges, who incidentally was re-elected a trustee for three years, and Ray Bennett, who heads the Olin Cellophane Division of the Ecusta Paper Corporation, Pisgah Forest, N.C. It might be said that one of the noticeable results of Mr. Singletary's participation in the Superintendent's affairs is that he has probably been responsible for increased participation of his associates in Scott Paper Company, with two of them on this year's program of paper presentations.

Mr. Singletary was born at Biloxi, Miss., on Dec. 8, 1905. His father was in the Naval stores business. When young Gordon was just 8, the family moved to Louisiana, where he later started in the paper industry in the Elizabeth mill, as



A 30-YEAR USER TELLS WHY YOUR CAMACHINE WINDERS *stay on the job!*

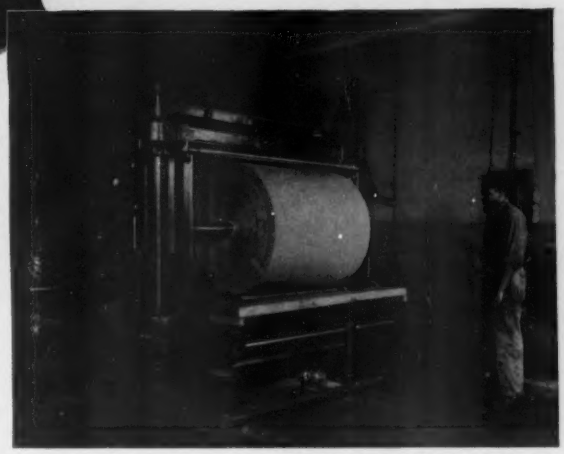
"Our new Camachine is mounted next to a Camachine that I operated about 30 years ago when I started in the paper business. Through the years, that machine and a few of the others have needed new parts to keep our production high. This need has been more than satisfactorily handled by Cameron's efficient service department, a group of well-trained, courteous men who have exercised every effort in our behalf to keep costly down-time to a minimum."

GEORGE B. GOLDMAN, *President*
G. B. Goldman Paper Co., Philadelphia, Pa.

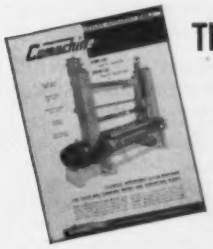
SOME YEARS AGO a large paper mill wanted to know why rolls rewound by Goldman were so far superior, from a technical standpoint, compared to those supplied by the mill. An expert was sent to study the problem.

After several days of careful investigation covering every phase of operation, equipment and method, the expert concluded that the difference in quality was due to a single factor . . . Goldman rolls were Camachine-wound, the mill's were not!

Similar tests have been conducted by other leading users, and always with the same result . . . Camachine's roll quality stands out! And Camachines *stay on the job!*



Camachine Type 10 recently installed at the G. B. Goldman Co. plant.



These new design features will cut down-time, too...

The CAMACHINE COMMANDER (Type 10) features several new engineering developments which virtually eliminate vibration and provide for superior strip control, including: positive toothed belts on the rewind drum drive; ball bearing mounted rewind shafts, fitted to eliminate end play; and equalized drive at each end of the riding roll. For complete information write for Camachine Catalog Supplement 2000-A.

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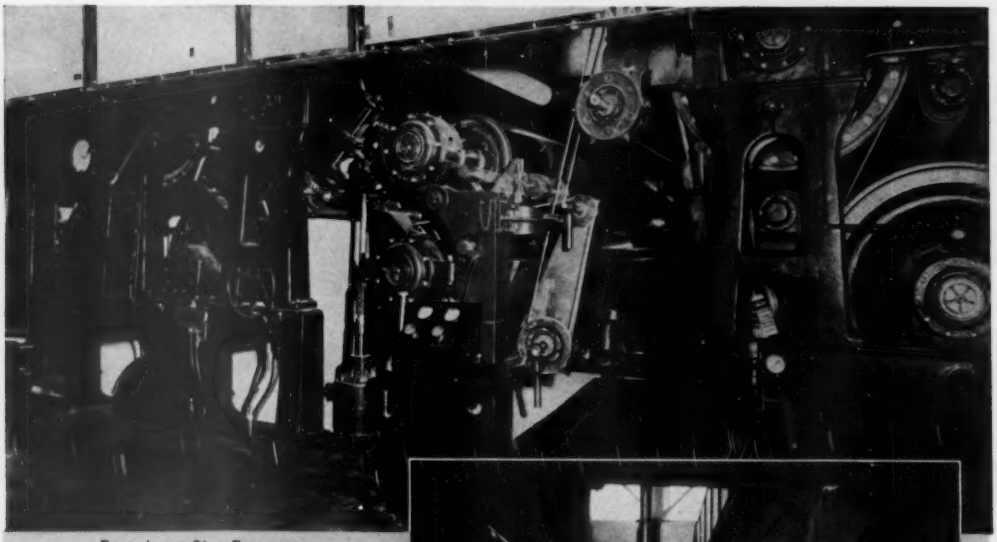
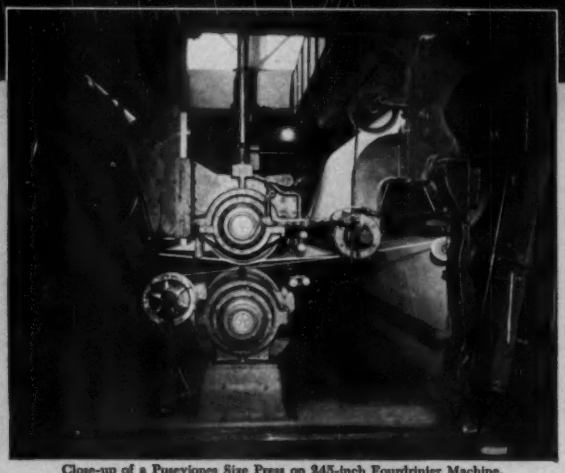


Puseyjones Size Press on 122-inch Fourdrinier Machine.

Better Surface Sizing

Pays for itself



Close-up of a Puseyjones Size Press on 245-inch Fourdrinier Machine.

In every mill making Bond, Ledger, Writing, Mimeograph and similar papers, a Puseyjones Size Press will pay for itself in dependable performance at top running speeds. On machines ranging in width from 84 inches to 245 inches, results are outstanding, including:

(1) Positive non-glare surface without production "slow-down"

(2) Excellent erasing qualities

(3) Proper stiffness and snap for easy handling

(4) Greatly improved surface to take ruling, printing, writing with pen or typewriter, or carbon copying

Size Presses are also being installed on machines making Kraft Bag and Specialty papers.

The addition of a new Puseyjones Size Press is only one of many improvements designed to give better production, better profits. Our engineers will gladly work with you to find the exact solution to your paper-making machinery problem.

THE PUSEY AND JONES CORPORATION
Established 1848. Builders of Paper-Making Machinery
Fabricators and Welders of all classes of Steel and Alloy Products
Wilmington 99, Delaware, U.S.A.

NEW CHIEFS OF AFFILIATES—**Left to right—WALTER MOREHOUSE in Charge of Paper Chemicals and Textile Chemicals Divisions of NOPCO, New York, new Chairman of Affiliates; R. BURKE MORDEN, President of Morden Machines Co., Portland, Ore., First Vice Chairman, and JOHN C. "JACK" MATHEWS, Second Vice Chairman.**

JAMES A. LAWSON, Chief of the Special Industrial Machinery and Equipment Branch of NPA, for pulp and papermaking machinery as well as other forest industries, printing, plastics, glass, etc. He told Detroit delegates from the machinery firms what Washington outlook on controls steel, etc., were as he saw them in June.

an operator after having helped build the plant. He was pulp superintendent and night superintendent before moving to Brunswick on Jan. 1, 1938. The rest of his career has been spent there, working up from chief shift supervisor to general superintendent, and finally in 1946 to plant manager, after William T. Webster joined National Container. It is an interesting fact that the new president of the Superintendent's Association is a self-made executive, who educated himself extensively by correspondence courses with the Alexander Hamilton Institute and the International Correspondence School, among others. His brother Frank (Curley) is a paper superintendent at Calcasieu, and another brother, W. L., who was in mills in the South until recently, is now in business in Louisiana. Gordon Singletary has generally shot a pretty good game of golf at around 82-90, and he enjoys one turkey hunt a year in Georgia, in which quite a few other paper industry executives take part. He is married and has a seven year old daughter.

The Atlanta-Biltmore Hotel, June 9-11, 1953, was chosen as the site for the next annual meeting, in deference to the fact that a Southerner now heads the organization. This will be the fourth convention to be held in the South.

New First V.P.

Donald R. Dick, born in Bones, Scotland, twenty miles from Edinburgh, is the new first vice-president of the association, and that means that the convention will move to Montreal or to Quebec the year after next. Mr. Dick, who is manager of labor relations for the Howard Smith Paper Mill, stationed at Cornwall, Ontario, came to the Detroit meeting only five weeks after his wife had passed away, leaving him to care for their children: Don Jr., 23 and two daughters, 19 and 17. The boy is in the research department of the Howard Smith Mills. Mr. Dick came to Canada from his native Scotland in 1908. He got into the papermaking industry as a result of playing hockey and baseball for the East Angus Mill of Bromoton Pulp & Paper. Before assuming his new duties he was manager of paper production at Cornwall. In the second World War he was a Leftenant Colonel in the National Defense Organization, with staff duties in Ottawa and Vancouver. During World War I he served as a buck private in the 21st Victoria Rifles.

There are ten divisions in the Superintendent's Association and, of course, the policy is to pass the presidency around to each division in sequence. This means that any division which has had a president has to wait ten years before another steps into that role, unless some unforeseen disruption of this program develops. And so it was that the new "bottom man on the totem pole" is from the Northeastern Division—Albert E. Bachmann. As fifth vice president, he will move up to the top of the ladder in five years. Second vice president is Harry E. Hadley, of the Gardner Board & Carton Co.; the third vice president is Martin Auchter, Hoberg Paper Mills.

Anyone who checks back mentally and recalls the presidents of recent years and then looks at the list of those who are coming up will see that the once-every-ten-years for each section is not a hard and fast rule, by any means. The Miami Valley, the Northwest and the Southeast have come off fairly well in showing up with at least presidents—two presidents recently served and "to be" in less than ten-year periods.

Mr. Bachmann will have the distinction, if he carries on in his new role to the top, of heading two different big associations of the industry. He was president of TAPPI for two terms, 1949-1950. Mr. Bachmann has made considerable studies recently of cost accounting as applied to paper production in the industry. Since 1941 he has been vice president of manufacturing of the Missisquoi Corp. in Vermont. Born in Boston, he was at 21 a chemical engineer out of M.I.T., and started as a paper-tester with Pejebscot. Then he worked with A. W. P. in Albany and Mt. Holly Springs, Pa., and for Kimberly-Clark, where for ten years he was staff superintendent of paper. He joined Missisquoi in 1936 as paper superintendent. The mill is in Sheldon Springs, but he and his family live in St. Albans, which is on the Canadian line and is a port of entry into this country. A son, 18, is in school in New Jersey.

TWO VETERANS AT DETROIT

J. W. YOUNGCHILD (left), of a famed Wisconsin paper making family, who has been for years Manager of the North Tonawanda, N. Y., mill of International Paper, was at Detroit. He is father of Ken, American Cyanamid's "Mr. Parex," and brother of Cap Youngchild, Wisconsin consultant, and has other relatives in Puget Sound mills.

JACK LOOMIS (right), who was supposed to have retired as Sales Mgr. of Paper Dept., American Cyanamid, Calco Chemical Division, but like the fire station horse, he doesn't give up easy and he keeps coming around to his office on West 48th, New York.

Affiliate Leaders

As long as we are presenting sketches of the new faces in the superintendent's organization, it would seem fitting to introduce the leaders of the Affiliates. The new chairman of the Affiliates is Walter B. Morehouse, who has been in charge of the Paper Chemicals Division of NOPCO Chemical Co. since June, 1940. A year ago he was also placed in charge of the Textile Chemical Division, with headquarters in Harrison, N. J. Born on a farm near an Indian reservation at Salamanca, N. Y., (although he is not an Indian) Mr. Morehouse graduated from the Pulp & Paper School of the University of Syracuse in the class of 1934. Incidentally, he tells stories about that Indian reservation to the effect that the Indians were offered 100 square miles or a hundred miles square on the Allegheny River, and as a result of their decision they got a fifty mile strip on each side of the river.

Mr. Morehouse started his career as a chemist in the East Rochester, N.Y. mill of Lawess Bros., a board mill, and then went to Container Corp. of America in Philadelphia. Later he became technical Rep., under Ralph Kummler in the old Bennett Co., which brought out the first acid staple wax size. But when Bennett was bought out by American-Cyanamid, Mr. Morehouse accepted an offer to head up the new Paper Chemicals Division at NOPCO. His best-known hobby is flying and he owns an Ercoupe, which he bases at Paterson, near his Caldwell, N. J., home. The Morehouses have three daughters.

Next in line for chairmanship of the Affiliates is Burke Morden, president of

BABCOCK & WILCOX MEN

At his first convention in Detroit was J. R. (RON) MURRAY (left) who succeeded late Art Leighton in taking over Wisconsin and Upper Mich. territory for Babcock & Wilcox, and he was introduced by FRANK E. HUTTON (right), Exec. Asst. and Mgr. of Process Equipment Division of B & W, New York. Ron Murray works out of Chicago, and previously had northern Illinois. Born in Minneapolis, he is graduate of Purdue, 1938, mechanical eng., and joined B & W that year. Has been in Chicago office since 1940.

At Detroit (l to r): CHARLES J. LUDWIG, Paper Mill Supt., The Mead Corp., Chillicothe, O.; GIL PARKS, Asst. Mgr., Fitchburg Paper, Fitchburg, Mass., and NORMAN WEIL, Tyler Co., New York, who was master of ceremonies and organizer of baseball dinner.

ROBERT A. HUSTON, former Public & Ind. Relations Director of Kalamazoo Vegetable Parchment Co., and now Vice President for Pub. & Ind. Relations, Fuller Mfg. Co., Kalamazoo, Mich., who made outstanding address on human relations — stressing values of sincere approach.

Morden Machine Co., Portland, Ore. He was elected first vice chairman of the Affiliates. Mr. Morden, born in Portland, Ore., graduated from the University of Oregon in 1935. His first years out of college were spent in an architectural office of a ship joiners company, where he became chief architect. He joined his father's firm, the Morden Machine Co., which was built up on an invention of a refining machine by the late C. W. "Whit" Morden. Bert went into his father's firm in 1946 and became president when "Whit" Morden passed away in 1951.

The Affiliates now have a second vice chairman, and the new personality elected to this post is John C. "Jack" Mathews, who is sales manager of Wm. Cabble Excelsior Wire Mfg. Co. Inc., in Brooklyn, N.Y. He is a brother-in-law of Gerald Morrell, a well-known chemical salesman in the Pacific Coast industry. Jack Mathews was born in Brooklyn in 1905 and was in the textile business for a number of years before going over to the Campbell Co., 16 years ago as a salesman. He has been a sales manager for the past six years.

Controls and Allocations

Although not on the regular program, one of the important events of the convention was the session which James A. Lawson, Chief of the Special Industrial Machinery & Equipment Branch, National Production Authority, Washington, D.C., had with the machinery and equipment people. It was a question-and-answer session in which he advised them on the outlook on Washington control and allocation developments. In his position he heads up the Washington activities for equipment for a large number of special industries, including pulp and paper, woodworking and sawmills, printing and publishing, graphic arts, rubber, plastics, drugs, glassmaking, water resources and sewerages. His dealings are of course with the manufacturers of equipment, but he works very closely with Robert Oakley, Section Chief on Pulp & Paper Machinery Equipment, who after working in a number of paper mills has become a career man of 18 years in the government. It might be said that Mr. Lawson and Mr. Oakley are the "master mechanics" of NPA, and take their recommendations from the commodity branches, where their contacts are with Jack O'Connell, branch chief of maintenance and repair for the Pulp, Paper & Paperboard Division of NPA. Mr. O'Connell was also at Detroit.

Mr. Lawson, Chicago-born, now in his sixty-ninth year, is a graduate of Stanford and the University of California in chemical engineering and has had a long career in the residuals—fats, as well as the general chemical field. Most of these years he has been a consultant with other chemical companies in the West. During World War I he was a dollar-a-year man in charge of water pollution and protection in the state of California under the NRA. He was a building consultant in California in July, 1950 when he was called back to Washington again. He also served as Chief of the Facilities Branch of the Chemical Bureau of the Office of Production Management in World War II. Part of his duties were overseeing the allotments of mechanical and other equipment to pulp and paper mills all over the world and produced in American factories. This was carried on under WPB, of course.

A KAUKAUNA REUNION

THOSE OLD FOX RIVER FRIENDS—both from Kaukauna—had a reunion at Detroit Superintendents Convention—(left) JOSEPH L. HOOLIHAN, Gen. Supt., Port Huron Sulphite & Paper Co., Port Huron, Mich., and FRANK X. KREILING (right) Supt., at Thilmany Pulp & Paper, Kaukauna. Mr. Hoolihan has a mother and others of his family at Kaukauna where he was formerly connected with Thilmany.

Two old friends who got together to chat were Jack Loomis, who officially retired as sales manager of the paper department of the American Cyanamid Company, Calco chemical division as of May 31, 1950 (but he's still a-working) and M. Craig Maxwell, who has really retired after being a superintendent for many years with Bellows-Ball of Vermont. Maxwell retired before the last of November and he lives at 2321 East Cumberline, Philadelphia, Pennsylvania. His son, Ralph D. Maxwell, is in the Glassine Paper Company.

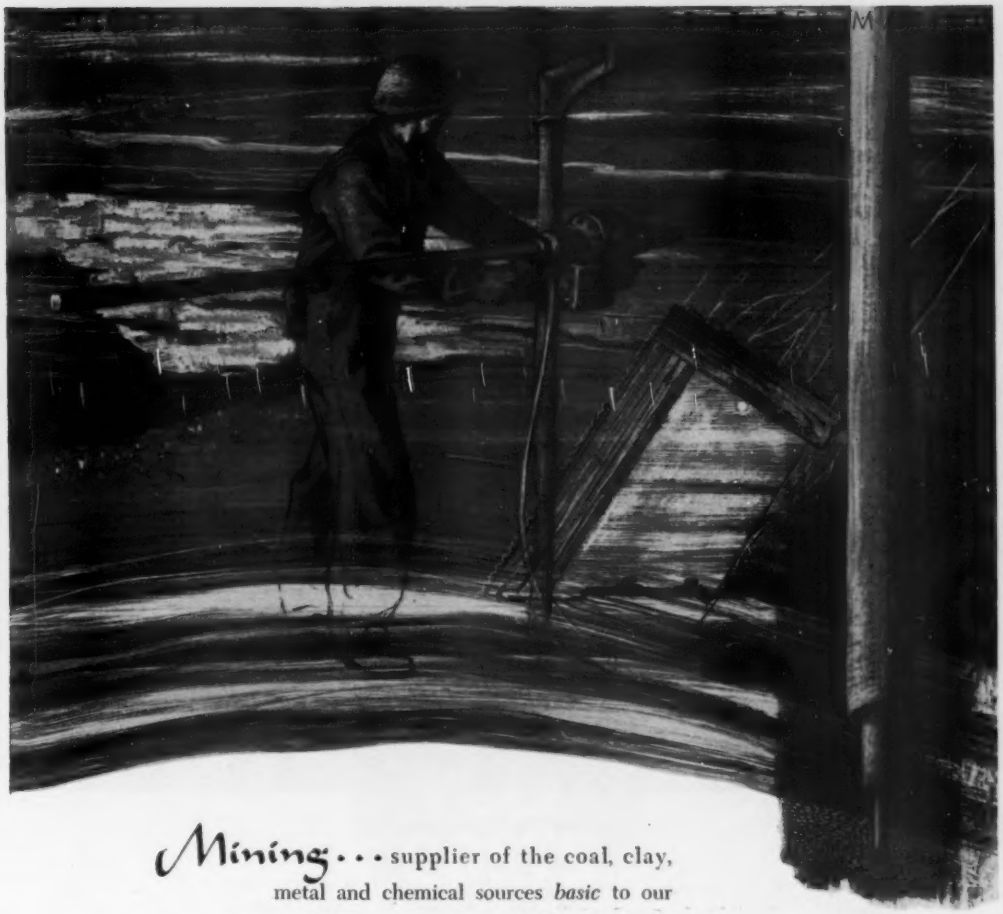
Marvin Jones, a representative of Lockport Felt Company in several midwest states, who lives at Battle Creek, Michigan, had his thoughts as much on an impending wedding in his family as on the plans for the convention while he was in Detroit. In August he was to give his daughter, Miriam, age 20, in marriage to a young Army man from Portland, Oregon—Michael Pickett Haggerty. This is providing the young man was able to get a leave to come to Battle Creek for the event.

Speaking of Army notes, the delegates from the Miami Valley reported that they were expecting Major Bill Beckett, who was still stationed in Arizona in the Army Air Corps to be called overseas soon after the convention.

A New B & W Man in the West

A new face at the national meeting, was that of J. R. (Ron) Murray, who is a new sales representative for Babcock and Wilcox in Wisconsin and upper Michigan, where the B & W business is primarily in the pulp and paper industry. He succeeds the late Art Leighton in that post. Mr. Murray was born in Minneapolis, graduated from Purdue in 1938 in mechanical engineering, and has been with B & W since 1938. He moved to Chicago in 1940 and that will continue to be his

(Continued on Page 57)



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Typical wool showroom, where buyers make their selections.

Photographs courtesy of Wool Bureau, Inc.

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First, the fleece. From 1,500 classified types, buyers choose only those special wools that meet the exacting requirements of Huyck Felts. In the principal wool-growing countries of the world this discriminating selection goes on. For these must be just certain wools, rare and costly.

In they come, to the great wool warehouses at Rensselaer, New York. From this vast supply, skilled sorters select the grades specified for each type of felt, then blend them for the precise task the felt is to perform on the paper machine.

This is the first, and only the first step in making the famous Huyck felts which for 82 years have rendered such essential service to the pulp and paper industry.

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PAUL WEST (left), Supt. at Thilmany, and Chairman of Northwestern group, who told of open house "marathon" at Thilmany; and CECIL R. CURRY (right), who came north from National Container, Big Island, Va., to represent Southeastern Division of Supts.

DETROIT CONVENTION

(Continued from Page 52)

headquarters. Formerly, however, his territory has been only northern Illinois. He was with Frankie Hutton, executive assistant and manager of the process equipment of B & W from New York, and other B & W staff men.

Another B & W man who was on hand was J. W. Flynt, 42 years with the company and one of the original "four-horsemen" of the recovery unit. Some of the delegates to the convention had a hard time distinguishing between Ray Barton, of Michigan Paper Company and a past president of the Association, and Al Perlick, who was in charge of stock preparation at Kalamazoo Vegetable Parchment Company. On this page we are running their pictures side by side so the readers can see if there is any actual real resemblance. It is a fact that several times Mr. Barton was called Mr. Perlick and Mr. Perlick visa versa. If they are not similar in looks they are in habits, for both are very fond of fishing and of baseball.

Speaking of resemblances, R. C. (Slim) Bullock, Ecusta Paper Corporation and also superintendent of Pisgah Forest in North Carolina, has acquired a new nickname—"The Texan," since the night of the vaudeville show. Another delegate thought that he bore quite a resemblance to one of the professional comedians on the show who called himself "The Texan" and who batted a yo-yo ball around the audience with a paddle—practically knocking the ashes off a cigarette held by Dick Radsch, sales manager of the Appleton Machine Company and of Charles Reese, vice-president of production in Nekoosa Edwards Paper Company. The facts are, however, that Slim Bullock, while his hobby is poker, is not really a Texan for he was born in Athens, Georgia.

It was the end of their official capacity for Glen Sutton, Sutherland Paper Company, standard division superintendent, and his wife Leada, as Sutton ended his term as president of the association for pulp and paper. He was happy that his last trip, as president, before the convention, was into Ohio, because of the many friends he has in that state. Both Mr. and Mrs. Sutton are natives of Indiana where they lived before they went to Kalamazoo, so they have always felt very close to the neighboring Ohioans.

H. Sinclair, who is in the Wax Sizes division of American Cyanamid Company, has said that he would be making a trip to the Pacific Coast in September.

A group of New Englanders and New Yorkers was one of several parties that took in a Detroit-Yankee baseball game during the meeting. Those in the group were: J. W. Youngchild, manager of the International Paper Mill at North Tonawanda, New York; Donald Crocker, mill manager of Crocker-Burbank Company in Fitchburg, Massachusetts; Gilbert F. Parks, assistant mill manager of Fitchburg Paper Company; James Wischart, paper superintendent, Machine Coated Division, Oxford Paper Company, Rumford, Maine; Freddie Montagna,—superintendent at Southworth Company in West Springfield, Mass.; William Butler, superintendent of Sanitary Paper Mill in East Hartford, Connecticut.

All New Englanders and New Yorkers in the industry are not natives of their states. Although it is true that Gil Parks and Don Cochran were both born in Fitchburg, where they have always lived, and Mr. Monthena was born in Agawam, Massachusetts. Mr. Youngchild was one of the famous paper-making Youngchilds from Greenleaf, Brown County, Wisconsin and Mr. Butler came from Eastern Pennsylvania. Mr. Wischart came from farther away from any of them. He came from Guardbridge, Scotland.

Convention Highlights

One of the highlights of the convention was the talk which was given by Paul West, pulp superintendent of Thilmany Pulp & Paper Co., who discussed the remarkable two-week-long "open house" at his mill in Wisconsin—apparently the first mill that ever had such a long open house. There was a great deal of preparation for the event, and there were five tours of the mill staged every day of the two weeks, each tour lasting two hours. More than 2,000 visitors went through the mill in this period, coming from 16 states and 3 foreign countries. One reason for its extended duration was in order to give all possible groups in the vicinity of the mill a chance to see its operation. The mill men reported that everything went so smoothly that operations were hardly affected at all. C. F. Raber who is director of industrial relations at the American Box Board Company, Grand Rapids, Mich., stressed the importance of the superintendent in good public relations and industrial relations in the mill. He said it was important for the superintendent to keep the foremen under him informed of how to carry out their jobs. When he gives the foreman the proper information and tools with which to work he is reaching the real objective of a superintendent.

WHERE DO NEW ENGLAND PAPERMAKERS COME FROM? SOME ARE BORN IN NEW ENGLAND, BELIEVE IT OR NOT!

HERE IS A GROUP OF NEW ENGLANDERS, a special group picture taken by PULP & PAPER before they went to a Yankees-Tigers ball game together. Are New England papermakers born or made? Maybe we can't answer that question, but in this group are three of the five-some, who were born in New England, and two were born right in the town where they are mill executives. Left to right: JAMES M. WISCHART, Paper Supt., Machine Coated Div., Oxford Paper Co., Rumford, Maine; GILBERT F. PARKS, Assistant Manager, Fitchburg Paper Co., Fitchburg, Mass.; ALFRED L. (Freddie) MONTAGNA, Supt., Southworth Co., West Springfield, Mass.; DONALD CROCKER, Mill Manager, Crocker-Burbank Co., Fitchburg, Mass., and WILLIAM BUTLER, Superintendent, Sanitary Paper Mill, East Hartford, Conn. Of this group, Gil Parks and Don Crocker were born right in Fitchburg; Freddie Montagna was born in the same state where he works—in Agawam, Mass. But Jim Wischart comes from Guardbridge, Scotland, and Wm. Butler from Easton, Pa. Incidentally, there are two Superintendents Division Chairmen in this picture—Mr. Montagna of Connecticut Valley Div., and Mr. Wischart of the Northeastern.

Paul L. Phillips president of the International Brotherhood of Papermakers, AF of L, Albany, N.Y., was a speaker on the "human engineering" forum. He asserted that management would find it a simple matter to learn what its workers are thinking, by contacting the union committee. He said that some foremen and superintendents should spend more time in "studying treatment of men as human beings, as well as ways to increase production and cut costs." Many supervisors never take the trouble to ascertain the real labor relations policy of their company, and never make a complete and detailed study of the labor contract, and they do not study government laws and regulations which affect labor in their plant," he said. In conclusion, he declared that our capitalistic system and industrial system is operating in a goldfish bowl—"on trial before the courts of public opinion of the peoples of the world."

Seven Chairmen Present

Seven of the ten chairmen of the various divisions of the Superintendent's Association were on hand for the national convention. They were: ALFRED L. MONTAGNA, of Connecticut Valley; RICHARD H. PETERS, chief of the Michigan Division; JAMES M. WISHART, who heads the Northwestern Division; PAUL H. WEST, leader in the Northwestern Division; A. C. McCORRY chairman on the Pacific Coast; CECIL B. CURRY, who leads the Southeastern group; and ELMER MITCHELL, leader of the Penn-Jer-Del group.

Mr. McCorry, who is pulp superintendent of the St. Regis mill in Tacoma, Washington, was met in Detroit by JOHN VICTOR superintendent of the paper mill and ROBERT DE LONG who heads up wood procurement at the Tacoma mill, and they continued on to the annual meeting in the Thousand Islands, St. Lawrence River, New York, of the supervisors from all the St. Regis mills.

The Manufacturer's Association which is headed by Harry Moore, president of Beloit, was one of the side events of convention week.

The next chance for the superintendents to report to their groups on the events that took place in Detroit will be at their divisional fall meetings. The Northwestern Division is meeting at Poland Spring, Maine, September 18-21. The New York-Canadian Division will meet at Saranac Lake, the same dates. The Southern and Southeastern Division will hold a joint meeting at Roanoke, Virginia, October 8-10. The Pen-Jer-Del superintendents will be meeting September 26-27 at Wernersville, Pennsylvania and Mr. Mitchell, their chairman, said they had a very good program lined up. On the Pacific Coast, the Pacific Coast Division is holding a three-way meeting with Pacific Coast TAPPI and Canadian Western Technical Branch at Victoria, B.C.

Past presidents on hand for the meeting were Fred C. Boyce president of D. J. Murray Manufacturing Company, Wausau, Wisconsin, the founder and first president; JACK O'CONNELL, now in Washington with NPA; ROY H. KELLY, manager of the Marathon mill at Rothschild, Wisconsin; WILLIAM H. BRYDGES, consultant at Lynchburg, Virginia; F. LEROY ZELLER, manager at Chillicothe Paper Company; H. H. HARRISON of Crystal Tissue in Ohio; RAY BARTON, of Michigan Paper; HOMER LATIMER, of Champion Paper & Fibres; CHARLES REESE of Nekoosa-Edwards.

Delegates to the convention learned of the passing of LOUVAIN G. SIMONS pulp and paper mill engineer of Charles T. Main, Inc., Boston, Mass., on June 10, after a long illness. He was born in Wisconsin Rapids, Wisconsin and graduated from M.I.T. in 1932, and is a son of the late V. D. Simons, mill engineer of Chicago and a brother of Howard Simons, who is now in Vancouver, B.C. and has built a number of Canadian mills.

SULPHITE PROBLEMS

REVIEW OF PAPERS GIVEN AT DETROIT

By GORDON MORSETH

GORDON MORSETH, Gen. Supt. Detroit Sulphite Pulp & Paper Co., Detroit, Mich., who was Chairman of the Sulfite Pulping Session of Detroit Convention, and his mill in Detroit was visited by some delegates.

General Superintendent Detroit Sulphite Pulp & Paper Co., Detroit, Mich. who was chairman of the Sulphite Pulping session of the Detroit convention. Written exclusively for Pulp & Paper.

Mr. Hagar in his paper entitled, "Some Practical Considerations in the Pitch Problem," presented views on the "facts of life" concerning pitch, "what it is, where it comes from, how it becomes troublesome, some of the basic methods of treatment, and a suggestion or two on how to apply these facts to the mills."

He explained the role of mechanical agitation in releasing pitch particles from the ray cells of wood and the preliminary effect of spent sulphite liquor as a dispersing agent. Mr. Hagar then discussed the basic methods which are in use for pitch control:

(1) Leave it alone.
(2) Penetrating and dispersing agents to be added to the digester to keep the pitch dispersed for later washing.
(3) Dispersing agents in general to keep released pitch in suspension through the system.
(4) Surface area substances, such as clay and diatomacious earth to pick up pitch particles before agglomeration takes place.
(5) Use of alum to attract pitch particles of opposite charge and thus prevent balling up.
(6) Solvents such as kerosene to dissolve pitch and xylene to clean deposits of pitch.
(7) Regular clean-ups scheduled to prevent the formation of troublesome deposits.

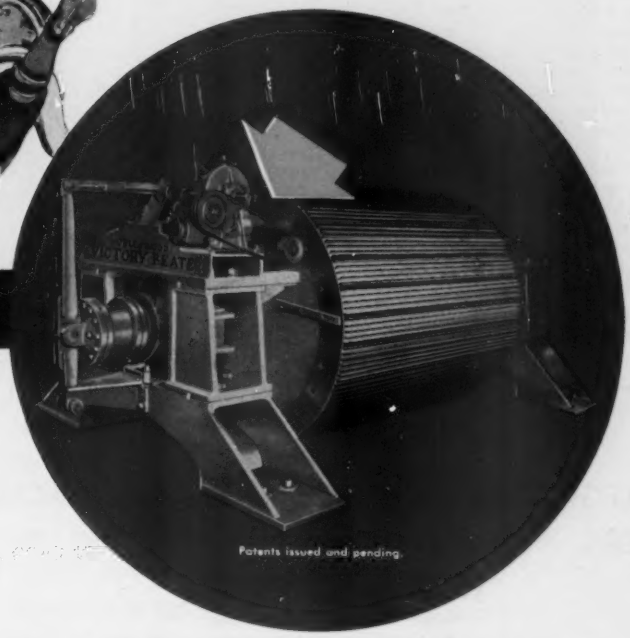
Mr. Hagar pointed out that the clean-up method may be neglected at a cost to the mill operators.

In the discussion following the formal presentations, Mr. Hagar outlined a beaker test which his company employs to check the effectiveness of pitch control agents.

Mr. J. K. Perkins, Improved Paper Machinery Corp., Nashua, N.H., presented a fine descriptive paper on the Valveless Vacuum Filter, which is also known a the Linblad Filter. He first reviewed the various methods of stock thickening by discussing the use of the simple "drainer," open cylinder decker, rotary vacuum filter, and modifications of these methods.

Pretty Smooth!

(and engineered to stay that way)



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4. *Centralized bedplates assure 100% roll-bedplate contact*
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12. *All-time record for continuous production!*

IN THE *Controlled Flow* VICTORY BEATER horizontal oscillation of the roll over the centralized, hydraulically-controlled bed plates provides automatic honing, eliminates ridging and keeps the bars smooth. Bars are always in perfect shape to assure uniform stock treatment. This unique feature also reduces maintenance and operating costs to a minimum.

VICTORY BEATERS are made in two styles: (a) **Single Roll** units for handling batches as small as 500 pounds. (b) **Multi-Roll** units with two, three or more rolls for treating 100, 150, 200 or more tons per day on a continuous production basis. The superiority of the *Controlled Flow* VICTORY BEATER is a matter of on-the-job performance records by some of the world's largest paper producers. ***All the facts are available for your examination. Write, wire or phone today for Booklet PP952***

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The importance of entrained air in retarding operations of rotary vacuum filters was carefully outlined.

The "Valveless" was described as a sectional vacuum filter. Each section has its own curved barometric leg which rotates with the cylinder, alternately filling with filtrate, and forming a vacuum leg as the cylinder rotates the duct into the proper position for discharge. The sheet is formed as the duct is filled, and as the section gains elevation above the discharge the vacuum gradually increases until, as the sheet emerges from the vat, air is pulled through the mat. At this point it is possible, according to Mr. Perkins, to put some wash water through the sheet.

So far the "Valveless" has been installed mainly as screen room thickeners. The use of press or extractors is possible for higher discharge consistencies up to 18 percent. The regular discharge would be approximately 11 percent, depending upon freeness, speed, submergence of the mold, etc.

The "Valveless" is presented as being a high-capacity, low-maintenance machine which is capable of operation under extreme fluctuations of flow and consistency.

THINKERS OR STINKERS

A Review By John Caderet
Wayne University, Detroit, Mich.
Exclusive to Pulp & Paper

Superintendents must act and think in accord with modern managerial techniques. They must possess superior abilities of understanding, planning, and direction. Without these abilities they fall into bad repute and are looked on as stinkers by their subordinates.

The difference between the efficient superintendent, the thinker, and the stinker, lies in the ability to analize people, problems, and procedures. Too often the superintendent falls into disrepute because he accepts certain management misconceptions which, though widely accepted, are fundamentally unsound. Typical examples of such misconceptions are:

(1) "We treat everyone alike."
(2) "We are just one big happy family."
(3) "Present day workers are inefficient and lazy."

Many superintendents fail to appreciate the value of an adequate communication system. They accept all varieties of substitutes when it would have been expedient and effective to adopt a solid system of transmitting information in the first place. Because they have failed to establish adequate channels for the efficient transmission of information, they have wrought an injustice on their subordinates and have not fulfilled their obligations to their superiors or the owners of the company.

Too frequently we hear superintendents wail that they have too much to do, too many meetings to attend, too much paper work, and in general are just too damn busy. The superintendents that makes such statements is convicting himself of inefficiency, poor planning, and a general waste of time. He is also announcing to those within his hearing that he hasn't the slightest understanding of organization or the delegation of authority and responsibility. If you come across a member of the management team who is complaining about the disciplinary problems in his department, you can be pretty sure that the training responsibility delegated to that manager has not been carried out. Trained workers are happy workers and trained workers do not create disciplinary problems. Neither do they need a number of rules and regulations to guide their conduct in the job situation.

A superintendent can create a lot of dissension and ill feeling among the work force if he lacks the ability to give directions. Time and again difficult situations have come into existence because the one giving the directions assumed that the one being directed understood what was meant to be done. It is a pretty good idea for the superintendent to give directions based on the experience and understanding of his subordinates rather than to base his directions on his own experience and understanding.

Unless superintendents understand and apply acceptable managerial techniques, particularly understanding, planning, and direction, they are not doing the job for which they are being paid. And they are not commanding the respect of their subordinates which is of paramount importance to efficient operation.

by JOHN CADERET

IMPREGNATING AND COATING OF SPECIALTY PAPERS

By Frank W. Egan*, Partner
Frank W. Egan & Company
Bound Brook, New Jersey

There are so many outlets for products derived by coating or impregnating processes that to list them all would be quite a task.

Each passing year finds more paper being coated on the papermaking machine. Among the various methods being used to coat on the machine are:

(1) The modified letterpress print coater,
(2) The roll and knife coater, and
(3) The offset gravure print coater

The offset gravure print coater applies eight pounds of clay-starch coating per 25 in. x 38 in.—500 ream basis at a speed exceeding 1000 feet per minute.

The thixotropic or the dilatent properties of the coating determine the type of coating equipment to be used. To produce a good coated surface, the surface of the paper or paperboard must be level and smooth. A three-roll calender or breaker stack is used, prior to the coating unit, in the paper machine.

Coating Roll

Coating applied from a roll causes ribbing. The coarseness of the ribbing is determined by the size of the break away angle. If the web is wide and the coating roll is of large diameter, a small diameter doctor roll, driven in the reverse direction to the web, helps to reduce the ribbing.

The reverse roll coater is a versatile machine. It is used to clay coat paperboard, and to apply gum, resins, lacquers, paints, enamels, varnishes, shellac, and asphalt, also phenolic, melamine, urea and silicone compounds. The chilled iron rolls in a reverse roll coater can be ground with a straight face because very little pressure is exerted in the nip of the metering and casting rolls. This arrangement permits uniform application of coating to the web regardless of its width.

Knife roll coaters apply high solids coatings of vinyl plastisols and organisols as well as rubber and lacquer compounds of pigments.

Knife blanket coaters produce uniformly coated wegs with very little webtension because the coater blanket supports the web against the face of the coating knife.

Solventless coating machines are available for the application of polyethylene and Saran coatings. These coatings are in granular form. Polyethylene is heated to 500° to 600° F. and extruded through a sheeting die and laminated to the web. Saran is heated to 325° F. and applied with a reverse roll coater.

Vinyl, polyethylene and Saran resins are applied to a paper web by means of a calender stack. Artificial leather, masking tape, shade cloth, floor covering, wallpaper, paper currency, sound-proofing membranes and facsimile paper are just a few of the webs that are impregnated. Some of the webs are coated after they are impregnated.

As each year goes by, more and more paper and paperboard finds new outlets. The field even becomes wider after the paper or board has been impregnated or coated.

From a paper presented before the 33rd Annual Convention of the American Pulp and Paper Mill Superintendents Association, Detroit, Michigan on June 17-19, 1952.

one of the most modern paper machines in the world today

We have designed and built what we believe to be one of the most modern paper machines in the world today. As the modern paper machine has grown in width and speed, it has outgrown mechanical controls . . . but we believe hydraulics is an ideal means of control. This Bagley & Sewall machine is the most completely hydraulic-controlled paper machine in the world. Each major operating unit requiring movement—each pressure operation and control is at finger-tip selection at a station point or console . . . providing instantaneous and accurate operation of the entire machine for the utmost control and productivity.

Recently installed at the St. Regis Paper Company, Cantonment, Florida, this machine has a wire width of 228" and was designed for a production of 400 tons per day at a speed of 2200 feet per minute.

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Finland Representative
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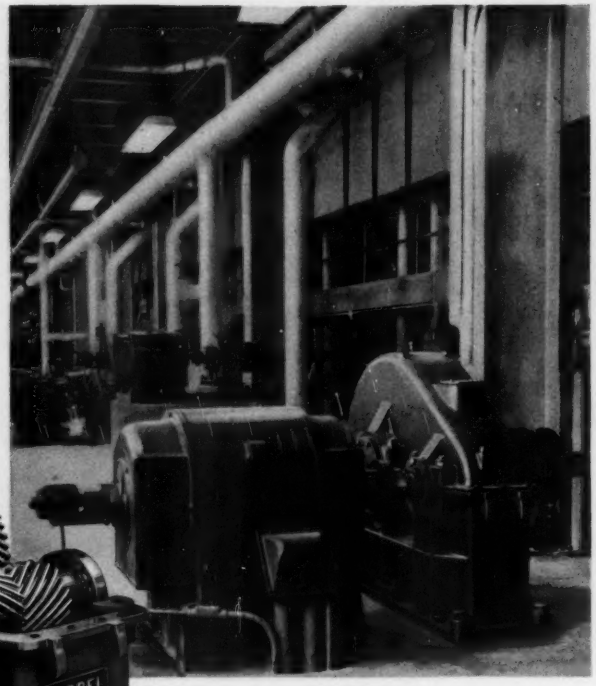
Helsingfors, Finland

Inside Story of 18 speed reducers in a southern paper mill



The successful performance of Farrel® speed reducers in such mills as this, where eighteen units are installed, is an inside story of design flexibility.

Unlike most "standardized" products, Farrel speed reducers are standard only in their principal features. They are adaptable in critical detail. Gears, shafts, bearings, and even some housing dimensions, can be proportioned to meet specific load, speed and service requirements. This flexibility has resulted in the solution of innumerable application problems.

In addition to this feature, Farrel speed reducers have a number of other advantages. The quiet, vibration-free performance of the herringbone gears results from extreme accuracy of tooth spacing, contour and helix angle . . . qualities inherent in the Farrel-Sykes method of gear generation. Precision manufacture and highest grade materials contribute to long gear life.

Shafts and bearings are factored to safeguard against interruption of vital processes. Gear cases are proportioned to withstand repeated heavy peak loads. Joints are sealed to prevent entrance of dirt.

Write for further details of these problem-solving units. Ask for a copy of Bulletin 449.

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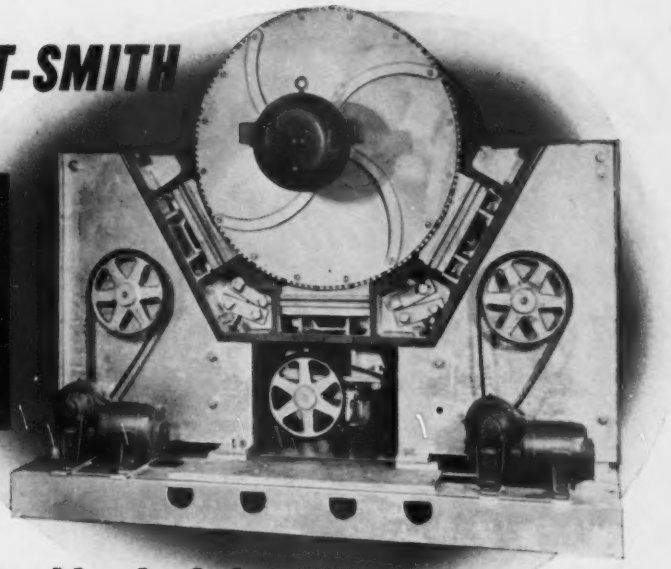
Plants: Ansonia and Derby, Conn., Buffalo, N. Y. *Sales Offices:* Ansonia, Buffalo, New York, Boston, Pittsburgh, Akron, Detroit, Chicago, Memphis, Minneapolis, Portland (Oregon), Los Angeles, Salt Lake City, Tulsa, Houston, New Orleans.

FB-761

Farrel-Birmingham®

MIDWEST-SMITH

AUTOMATIC CONTINUOUS BEATER



for controlled fiber treatment

The Midwest-Smith beater is definitely a precision-built machine. Its adjustments and control features will enable a mill to develop the very maximum mullen, tensile and tear of which a fiber is capable—and do it on a continuous basis.

It is so flexible that it will process a stock for a sheet of maximum density and finish, or for high porosity grades of the order of cement bag papers. It is a high-production machine—capable of from 50 to 100 tons of Kraft or semi-chemical pulps per day, or far more than that when on soda pulp or sulphite.

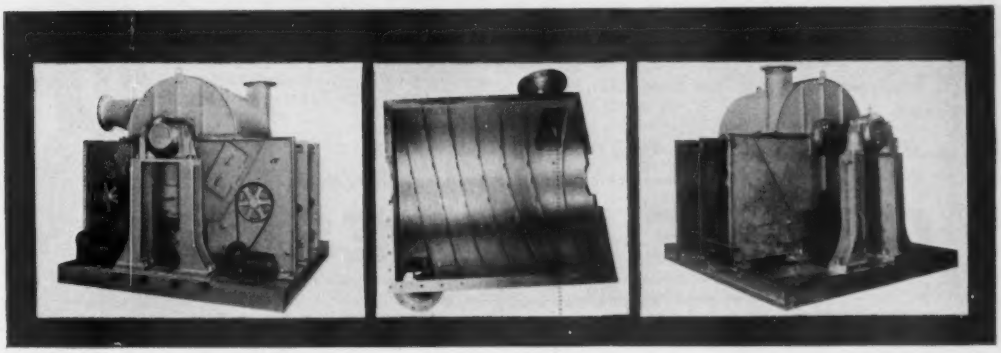
Its high production rate is partially accounted for by the effective use of its three-bed plate feature and its special roll which build the wet beating factor to over 44,000,000 sq. in. of contact surface per minute, based on a roll speed of 157 R.P.M. In other words, from 4 to 8 times the hydrating surface of other equipment.

Also contributory to this high productive rate is the vaned hood which channels the incoming stock along a spiral path horizontally across the roll during its 8 trips under the roll and across the plates.

Without stopping to explain how, permit us to add that the stock crosses 78" of bed plate surface eight times under pressure in a normal beating cycle of from 1 to 3 minutes. And that means a lot of hydrating and brushing for such a short beating period.

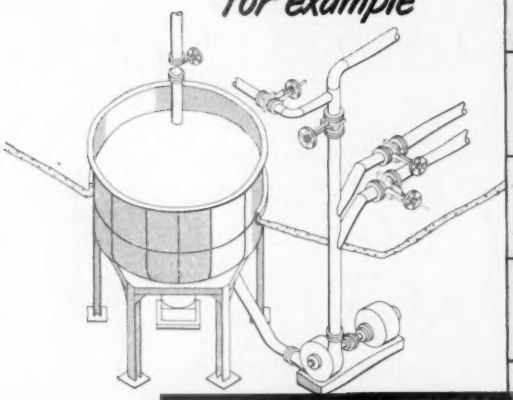
There is much more, very much more, that we'd like to tell you about the new Midwest-Smith automatic continuous beater. Send for illustrated material and get the entire story.

THE MIDWEST-FULTON MACHINE CO.
Dayton, Ohio



Can You Say As Much for Your Valves?

...in Pulper Outlet Lines for example



THE INSTALLATION

Crane pulp stock valves in pulper outlet lines, Chase Bag Company mill, Chagrin Falls, Ohio.

THE HISTORY

Normal consistency of stock at pulper is about 6%. Pulp Stock Valves formerly used here had a strong tendency to clog. Frequent shutdown of pulper was necessary for cleanout of valves and lines. This was a costly problem since the plant required continuous pulping.

The old valves were replaced with Crane Pulp Stock Valves, now in service more than 5 years. Since installed, the Crane valves have not forced a single shutdown. Clogging has been completely eliminated.

VALVE SERVICE RATINGS

SPECIAL FEATURES:	Good shearing-action disc
SUITABILITY:	Specially designed for pulp stock service
MAINTENANCE COST:	Inspection and oiling only
SERVICE LIFE:	more than 5 years - no wear showing
OPERATING RESULTS:	no trouble with clogged lines
PRICE:	O.K. – good value
AVAILABILITY:	Regular Crane product

THE VALVE

Crane No. 1425 non-clogging Pulp Stock Valves feature a patented *combing-and-shearing-action* disc and seating design. The knife-edge disc shears through combed fibers and seats easily against lead stop. Valve is bonnet-less; has no place where stock can accumulate. See these outstanding valves in your Crane Catalog, or ask your Crane Representative about them.

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BOOSTING PRODUCTION

HOW SCOTT PAPER COMPANY DOES IT

by John R. Curtis

Staff Development Engineer

Scott Paper Co., Chester, Pa.

Presented at Superintendents Convention, Detroit, Mich., June 19, 1952

JOHN R. CURTIS, who has headed up some of the experimental equipment development and paper machine development work for Scott Paper Co., drew one of the most interested audiences of the meeting, because of his experience—also because this is one of the first occasions for the Scott organization, an outstanding leader of the industry in high speeds and tissue production, to take a leading role in the Superintendents Conventions' technical sessions.

John is an older brother of Don Curtis, engineer and tissue machine specialist for Beloit Iron Works. Both were born in Ellicott City, near Baltimore, Md., and both were graduates of Johns Hopkins University as mechanical engineers.

Both had much experience in development of recent new high speed machines for Scott. Don was at Scott mills on the staff for postwar expansion, then was at Fernstrom Paper Mills on the Pacific Coast, before joining Beloit.

No matter whether you operate a paper mill, a pulp mill, a converting plant, or a hot-dog stand, the key to reduced units operating costs and increased profits is *greater productivity*. The plant utilizing only a small portion of its productive capacity usually does not remain in business very long due to its high overhead. By the same token, the mill which runs at full capacity, pushing equipment to its efficient limit, yields more sales dollars for every dollar invested. This means greater profits.

New Machine Or Old, Revised?

There are two basic methods of increasing production. The easy and sure way is to install additional equipment. However, an additional machine requires more space, greater capital investment, additional personnel and supervision, more equipment and auxiliaries, etc.

The second method is more difficult, but the net return, per dollar invested, is usually much greater. In 95% of the mills you, as a consultant, would be asked how

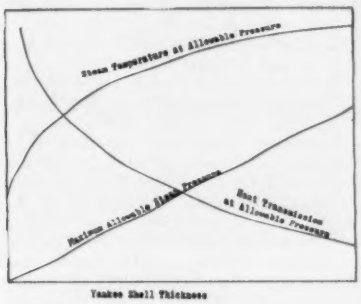


FIG 1 RELATION OF HEAT FLOW TO SHELL THICKNESS

JOHN R. CURTIS, Staff Development Engineer.

to increase the output of existing equipment. This is the daily problem which faces you as mill superintendents.

The truly progressive mill adheres to neither approach exclusively, but rather exploits both methods to advantage. The battle to increase output from existing equipment should be a continuing one, whereas complete new machines should be installed only after careful consideration of market and credit conditions. We have exploited our existing paper machines to the fullest by eliminating one bottleneck after another. Continuing development of this nature is relatively simple to engineer and easy to finance since one or two problems are attacked at a time and the payoff period is short.

Elimination Of A Bottleneck

There are three general steps in the practical attack on any production bottleneck, viz:

1. Definition of the problem
2. Engineering and application
3. Follow-up

It is unfortunate that most of us practically ignore steps one and three, feeling that engineering and application alone will solve the problem. In many cases it is difficult to define or state the problem correctly so we by-pass it and launch ourselves directly into engineering a solution. We, as consultants, would have to define our problem accurately before making any recommendations.

We would probably start our investigation by selecting half a dozen people and asking them the five all-inclusive questions—"how," "what," "when," "where," and "why." We would probably get six different answers to each question. This is natural for each man has made observations which have created impressions; these impressions to him are facts. Analysis of these so-called facts shows a number to be contradictory, and others to be of questionable soundness. Here we must attempt to retrace the individual's line of reasoning and then possibly we may arrive at one or two fairly sound facts from a number of different observations.

For example, an operator having difficulty maintaining clean felts might feel that a different felt design was required when actually some white water was getting into his felt showers. Or he might condemn the Boiler House Superintendent for low steam pressure and poor drying when actually his dryers were partially filled with water.

Follow-Up

The third factor, *follow-up*, is equally important. Maximum gains will never be derived unless the "kinks" are ironed out of a new installation and the operators are thoroughly trained, not only in the use of the equipment, but also as to why it is an improvement, and what is being corrected. The men who operate a new process must understand it and believe in it, or it will never work properly.

The Machine Production Problem

As consultants on a paper mill production problem, we could start our assignment by listing a number of general influences on machine production. These, we would find, fall into three classifications, viz:

A. *SPEED*

1. Operating bottlenecks which lim-

FIG 2

it *top machine speed*
2. Equipment limitations which prevent continuous operation at top speed

B. *LOST TIME*
1. Machine snaps and breaks
2. Clothing changes (wires, felts, rolls, etc.)
3. Routine maintenance
4. Engineering changes
5. Accidents

C. *WASTE*
1. Excessive waste on turnovers
2. Damage in handling rolls and finished product
3. Rejections for poor quality
4. Excessive waste in converting
5. Inability to use full machine trim

These influences may be summarized in chart form for any machine being analyzed. Suppose the following conditions prevailed at the mill in question:

Basis Weight 20# (480 sheets, 24" x 36")	
Dryness at Reel	96%
Trim	120"
Average Reel Speed for Month (30 days)	1000 FPM
Maximum Reel Speed in past	1200 FPM
Lost time during month for breaks, etc.	25 hours
Lost time during month for clothing	16 hours
Lost time during month for accidents	4 hours
Lost time during month for engineering changes	2 hours
Waste and unaccountable losses	40 tons

This particular machine produces 400 pounds of bone dry paper per hour per 100 FPM of speed. Thus, in terms of production, we can prepare the chart in Fig. 1.

Collection of data on waste and lost time may require special studies and records since all mills do not compile such statistics. An analysis of this data in chart form would quickly indicate the machine potential and points of major inefficiency. Our recommendations would be directed at the elimination of such "bottlenecks." In our final report to Management, we would outline several programs, each costing a given number of dollars, and each increasing the machine potential by a certain tonnage. These points would, of course, be added to the chart later when corrective measures had been formulated. The final recommendations for the solution of each problem in our program would involve some combination of the following:

1. Correct use of existing equipment
2. Engineering changes to permit improved performance
3. Training program to familiarize operators with proper techniques and to secure their active cooperation

So far we have been very general in outlining an approach to a production problem. Due to the limited time available, these will be confined to papermaking, although similar programs could be developed for pulp making and for finishing operations. Let us consider briefly the three general factors affecting production, viz:

1. Speed

2. Lost time
3. Waste

The Speed Problem

On all machines the gradual increase in speed will eventually make the headbox level a limiting factor. In some cases you will find a considerable head loss from the screen discharge into the headbox limiting the headbox level. This loss can be reduced by enlarging the stock lines and valves or by installing a by-pass. We have, on occasion, temporarily flowed a portion of the headbox stock directly over the screen discharge chamber into the headbox, thus making the levels about equal. Raising the level in the screens is not usually advisable since the tubs deteriorate rapidly when operated full.

The next step, of course, is to raise the headbox and screens. Care must be taken to check the effects on fan pump capacity and headbox walls. It may be necessary to speed up the pump to increase head and capacity, and straps may be required to strengthen headbox walls against increased hydraulic pressure.

If head-room limits the raising of your screens, there are still several alternatives. When there is little air in your headbox stock, you may completely enclose the headbox, and pump directly to the slice. Or, you can pump directly into an air-loaded headbox such as Beloit has built.

If you cannot increase your headbox pump capacity otherwise, it is quite possible to operate a smaller pump in parallel with it to give 1-2000 GPM more flow. Friction losses and pump characteristics should be checked carefully for these new conditions to insure adequate net combined head and capacity.

Another factor which frequently limits speed on an existing machine is the *drive*. Where drive equipment is overloaded, one should first check all load factors to make certain that none are excessive. It is advisable to develop a check list of such factors for your operators so that each may exercise control over power usage on his machine. Some points to be included would be:

1. *Water in dryers*—The installation of Visiflows in the condensate line will permit observation of condensate flow from each dryer during operation. Plugs installed in dryer heads near the shell will allow you to check for water in the dryer without opening the manhole.
2. Heavily loaded doctors for creping or cleaning dryers, wire rolls and calenders. A doctor blade with a wide, worn heel will increase loads.
3. Bad bearings anywhere on the machine. Check for heat and roughness.
4. High flat box vacuum and filled Fourdrinier wire.
5. Worn or grooved suction box covers.
6. Tight packing strips in suction rolls (press and couch).
7. Poor lubrication of suction roll packing.
8. Tight steam joints.
9. Tight chain drives.
10. Poor drive gear alignment.
11. Etc.

Having assured yourself that these load factors are all reasonable, it would be well to check the D.C. Motor next if this type of drive is employed. The horsepower input to this motor is calculated from the very familiar formula

$$\text{H.P.} = \frac{\text{Volts} \times \text{Amperes}}{746}$$

Your electrician is concerned primarily with the current, or amperes, for to him this means heat, and heat causes baked insulation and ultimate failure. In some cases it is possible to increase the voltage thereby securing the same horsepower output at a lower current input. Since voltage controls speed also, it may be necessary to change the drive sprocket to obtain a proper speed ratio; this is usually a relatively minor change. Your electrical equipment manufacturer will be glad to assist you with such recommendations.

Fortunately, most electrical equipment today is well made and will operate beyond nameplate ratings. Undoubtedly operation in excess of rating reduces your factor of safety and makes both your electrician and the manufacturer unhappy, since they are responsible for this equipment. However, such operation frequently can be looked upon as a "calculated risk" which is justifiable. Spare equipment, including an armature and field coils, naturally reduces the overall risk. It is not recommended that you overload all your drive equipment by 10%, but I do suggest that arbitrary limitations are not always sound approaches, and under certain conditions a "calculated risk" may be in order.

Another approach to overcoming a drive capacity deficiency is more involved; however in some cases it can be justified by speed and production increases. Where you have adequate generator capacity, but are limited by a drive motor, it is possible to improve the situation by installing a "helper motor."

All of these steps are of a temporary nature and will not eliminate the basic problem of an inadequate drive. However, in many cases it will be possible to increase machine speed considerably before new and heavier equipment becomes mandatory.

Another fundamental problem with old machines involves inadequate drying capacity. Since most of the equipment from the slice to the calenders is devoted to dewatering the sheet, it is obvious that the problem is quite extensive. To many people the term "drying" means only work done in the dryer section itself, and hence they struggle with their dryers in an attempt to solve all drying problems. Let us briefly review the influence of factors ahead of the dryer section upon the work which must be done by the dryers themselves. Following are two typical cases:

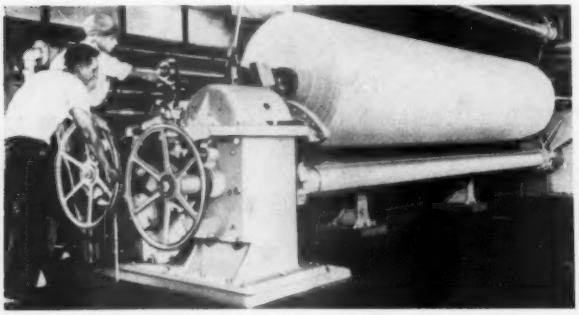
	Case 1	Case 2
Sheet dryness entering dryers	28%	30%
sheet dryness leaving dryers	95%	95%
Pounds water evaporated per pound of paper	$\frac{72-5}{28}=\frac{95}{95}=2.52$	$\frac{70-5}{30}=\frac{95}{95}=2.28$
Decrease in water evaporated	.24# or 9.5%	

Thus, by increasing the dryness of the sheet entering the dryer section by only 2%, the work of the dryers is reduced almost 10%. Or, putting it another way, on a machine with 50 dryers, it is equivalent to adding 5. This, combined with the high cost of removing water by evaporation, makes it important to do all possible water removal on the Fourdrinier and in the press section to relieve the dryers. You men are in a far better position than I to outline methods for improving Fourdrinier and press efficiency; however, the following points should be considered:

1. Number and size of table rolls in Fourdrinier, 2. Vacuum carried on flat boxes, 3. Number of flat boxes, 4. Use of lump breaker on suction couch, 5. Felt design, 6. Felt cleanliness, 7. Dryness of felt ahead of nip, particularly last felt where water removal may be primarily a "blotting" action, 8. Density of press rolls, 9. Open area of suction press. A small hole in a soft rubber cover may squeeze shut in the pressure nip, 10. Use of saveall pans around press rolls to prevent water from throwing into felts, 11. Amount of vacuum. There is some question concerning the advantages of vacuums above 14", 12. Width of suction boxes in press rolls. On high speed machines these must be increased in width, 13. Temperature on Fourdrinier and press section. Steam improves drainage of glassine stock and increased water temperature can be a positive influence on any machine from a water removal standpoint, 14. Nature of furnish, and stock freeness, 15. Number of presses, 16. Etc.

An important factor in drying which is frequently overlooked is sheet uniformity. In order to bring heavy and wet streaks in a sheet up to the minimum dryness, it is necessary to overdry the remainder of the sheet. Steam used for overdrying is wasted and reduces machine speed accordingly. For many obvious reasons,

(Continued on Page 72)



Paper on the Reel is Only Part of the Production Problem

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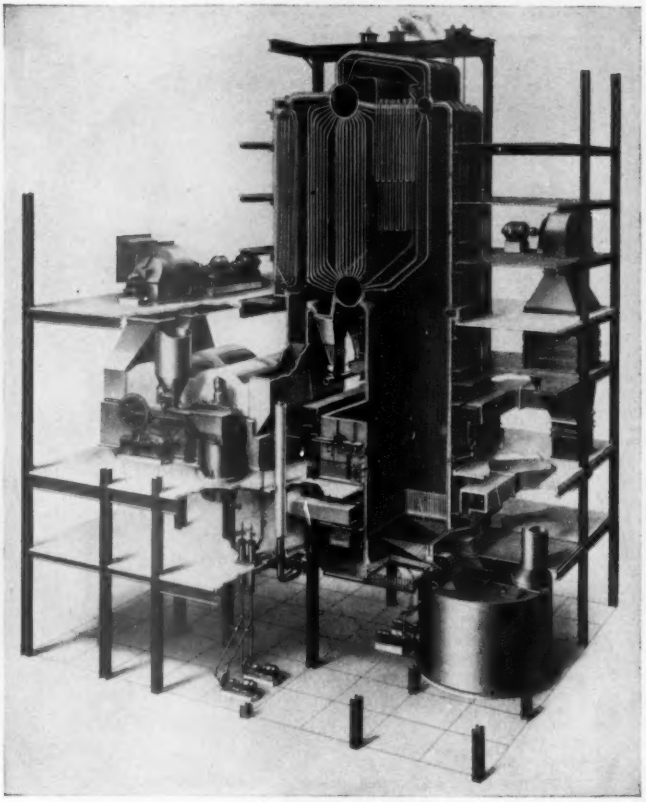

They keep coming back for more

The highest expression of satisfaction that can be accorded an installation of industrial equipment — or almost anything else for that matter — is that it be selected again and again by the same discerning purchasers.

Measured by that standard alone, the C-E Recovery Unit has an enviable record. Consider the list of pulp and paper companies at the right — a veritable "Who's Who" in the field — that have ordered and reordered the C-E Recovery Unit.

Four of these companies have ordered this equipment on four separate occasions. For example — one company ordered first in 1937, then in 1940, again in 1944 and again in 1950.

Three of the listed companies have ordered C-E Recovery Units three times. The rest have ordered twice.

Only superior performance could account for this record. Such performance explains why users of C-E Recovery Units "keep coming back for more".

Companies that have re-ordered C-E Recovery Units one or more times since 1937.

Brown Corporation
Champion Paper & Fibre Co., The
Chesapeake Corporation
Dryden Paper Company, Ltd.
Enso-Gutzeit Osakeyhito
Gaylord Container Corporation
Longview Fibre Company
MacMillan Export Co., Ltd.
National Container Corporation
North Carolina Pulp Company
Potlatch Forests, Inc.
St. Joe Paper Company
St. Regis Paper Company
Union Bag & Paper Corporation

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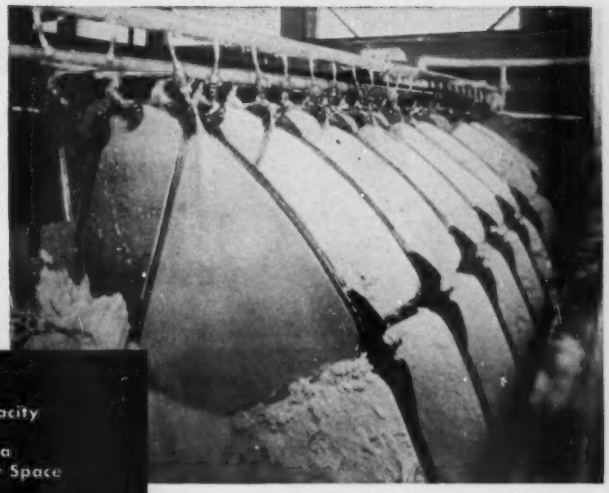
Disc-Type SAVEALL

- ✓ High over-all Capacity
- ✓ Greater Filter Area per sq. ft. of Floor Space
- ✓ The Ideal Unit for Stepped-up Production



American Disc-Type Saveall recently installed in the Chester, Pa., mill of the Scott Paper Company. Note the water jets peeling off the sheet from individual sectors.

Looking into the future, many paper mills are likely to be confronted with a "space" problem. How about your mill? Are you planning to

a...speed up your paper machines

b...install additional or larger machines

c...operate with greater tonnages of slower stock

d...reduce stock losses

To carry out any one of these plans will involve handling greater volumes of white water which may be beyond the capacity of the largest single drum type Saveall. If floor space is no problem, you can make your choice between the Oliver Drum Type Saveall and the American Disc-Type Saveall. BUT, if extra floor space is either non-existent or set aside for other purposes, look into the merits of the American Saveall.

The largest American can provide a filtering area approximately three times that of the largest Oliver drum type unit yet requires only approximately the same floor area. It has exceptionally high dewatering efficiency. It will give you the highest capacity for a limited floor area. It provides greatest flexibility in filtering area.

An Oliver United Engineer, well experienced in Saveall problems, will be glad to discuss the American Filter in relation to your limited floor space problem.

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BOOSTING PRODUCTION

Continued from Page 68

every effort should be made to form a uniform sheet. Flow spreaders and numerous flow rectifiers are available for this purpose.

If the basic drying problem actually lies in the dryer section, as it usually does, there are several approaches. First, you must insure complete water removal from your dryers. Even a thin film of water inside the dryer will retard heat flow drastically. Check the surface temperature of your dryers with a surface pyrometer and compare this with the steam temperature. Any large difference probably indicates water in the dryer. At high speeds scoops or dippers are no longer effective and it is necessary to resort to a steam blow-through to sweep condensate out of the dryer. This, of course, means the bucket type trap which empties when full, cannot be used since it does not permit a steam blow-through.

The most common failure of dryer systems is lack of proper differential pressure across the dryers, and particularly the steam joints. Two small pressure gauges installed on each steam joint in the steam and condensate sections, will tell you immediately whether a proper differential exists, and a Visiflow in the line will enable you to see at a glance whether water is moving freely.

Shell thickness is of major importance on large Yankee dryers where the maintenance of a high rate of heat transmission is essential. In some cases drying can be increased by reducing this shell thickness. The increase in drying rate is almost directly proportional to the thickness reduction. As a matter of interest, the ideal Yankee dryer is one whose shell is only thick enough to provide strength to carry its own weight, to resist the pressure roll loading and fatigue due to stress reversals, and to withstand the doctor action. It must have extra metal to permit resurfacing from time to time, and an adequate factor of safety must be provided. However, dryers should not be made thicker than this minimum just to use higher steam pressures. This is explained by the chart in Figure 2.

Allowable steam pressure increases directly with shell thickness, but the steam temperature does not increase directly with steam pressure. Since temperature differences control the rate of heat flow, you get more drying from a thinner shell even though you must necessarily reduce steam pressure. In some instances this explains the difference in drying rate between two Yankees which are identical in all other respects.

Use of air will, in many cases, increase drying rates and there are experts in the field to assist with the engineering of such applications. Two principles must be kept in mind in the use of air; viz:

1. You cannot evaporate water into saturated air.
2. Moving air increases the rate of evaporation in proportion to the air velocity (not a direct proportion).

The misapplication of air has resulted in a number of disappointments and it is sometimes well first to spend a few dollars for a trial installation to prove your point.

On occasion damp dryer felts may be the cause of poor drying and additional felt dryers, higher steam pressure, or air showers may alleviate the trouble. In isolated and special cases infra-red heating may find application to supplement drying capacity, but certainly not to replace steam drying.

There are many other factors which limit speed—some are real and others are matters of judgment. For example, some of you may have placed arbitrary speed limitations on your machines due to open dryer gears, bearing design, etc. I do not recommend that all arbitrary limitations be abolished, but I do suggest that you review them carefully; and perhaps where maintenance is not excessive, a "calculated risk" is in order.

When machines begin to vibrate and sway at high speeds, it is not always necessary to rebuild the whole machine. Reinforce or renew obvious points of weakness.

The Lost Time Problem

So far we have discussed only machine speed. Usually, of equal importance, is machine lost time. Just as men are wont to pass off a new idea for a speed increase by citing reasons why it won't work, they find it equally easy to submit to the theory that lost time on a paper machine is essential to operations. No one will dispute the fact that no machine will run continually, but let's look at the reasons for lost time and see what might be done about each to improve the situation.

Cause of Lost Time: machine snaps and breaks; clothing changes; routine maintenance; major shutdowns (maintenance and Engineering Changes); accidents.

Reduce Down Time by: adequate maintenance; improved scheduling; adequate maintenance--preventive maintenance.

I think you will all agree that *adequate maintenance* and *improved scheduling* will at least minimize the above influences on lost time. Briefly, we have set up a Maintenance Control Center under the direction of a Maintenance Planning Engineer. This control system, as we have established it at Chester, has been so successful, not only in reducing down time for clothing changes by one-third, but also in reducing maintenance, that we are extending it to other plants. All orders for maintenance or engineering changes pass through this Center for scheduling purposes. The group is primarily concerned with clothing changes, but also schedules work for major machine and equipment shutdowns. They have established time requirements for both repetitive and special work projects; in fact there are standard charts for each machine and each type of clothing change covering the sequence of operations and time allowances for routine work.

There are two fundamentals involved in sound scheduling, viz:

1. Determine the controlling project and reduce its time requirements to a minimum. 2. Provide adequate personnel, equipment, prefabrication, etc., to permit all secondary jobs to be done within this minimum time allowance. If lost time and maintenance are problems with you, a conscientious job of scheduling will pay real dividends.

Waste

The problem of high waste is usually a serious one, but it is so special in each mill that a general treatment is not possible. Let us only outline a few of the more obvious points to be considered:

1. Excessive waste on turnovers (Breaks, bad starts, sampling, etc.). 2. Damage to rolls and finished product. 3. Rejections for poor quality. 4. Inability to run full width sheet (Poor spread rolls, bad deckles) etc. 5. Poor converting efficiency. 6. Unaccounted losses. 7. Etc.

In our waste program, our first problem was to establish a means for measuring the loss due to each cause. This enabled us to plot a chart showing trends and the effects of changes. The second phase was the development of methods for reducing the losses to bare minimums, and this naturally was the most difficult assignment. The third step was one which is too often neglected, viz: the training of personnel, and follow-up. Unless your operators know what you are attempting to accomplish, and why, your program will never be a complete success.

Summary

In conclusion I would like to say that most machines are not "all in." More production can be obtained at moderate investments by:

1. Eliminating bottlenecks limiting *speed*
2. Reducing *lost time* by proper scheduling.
3. Reducing *waste*

Give top priority to projects which will yield a quick return—not necessarily to the easy jobs.

In attacking any of these problems be certain that you have defined and stated the problem correctly; the solution is then a matter of straight-forward engineering.

Finally, don't overlook the personnel factor and its influence on production. If your people believe in your objectives and understand your program, production will in many cases increase without the expenditure of a single dollar.

Planting Program

Australian Paper Manufacturers Ltd. plans to plant some 1,500 acres per year with Pinus radiata with a rotation of about 20 years, according to J. D. Brookes, of the company's subsidiary A.P.M. Forest Pty. The operations are being mechanized as far as possible. The areas are being cleared with a Hi-ball and chain to remove timber and a heavy roller to flatten scrub. The debris is heaped and burnt, after which the area is plowed and fenced and rabbits destroyed. The seedlings are produced in the company's nurseries and planted by machine. By the end of this year about 6,500 acres will have been established.

The company's mill at Maryvale produced 40,000 tons of pulp annually and will soon have a capacity of 75,000 tons.

FOURDRINIER FEATURES of each Beloit paper machine are selected and arranged to serve specific mill needs. On the erection floor, Stew Murray (*center*) discusses with Louis Dennis (*left*) and Don Ely convenient features of the dandy roll mounting and of the Beloit stainless steel oscillating suction boxes for a 230″ high-speed, high-production paper machine.—*Beloit Iron Works, Beloit, Wisconsin.*

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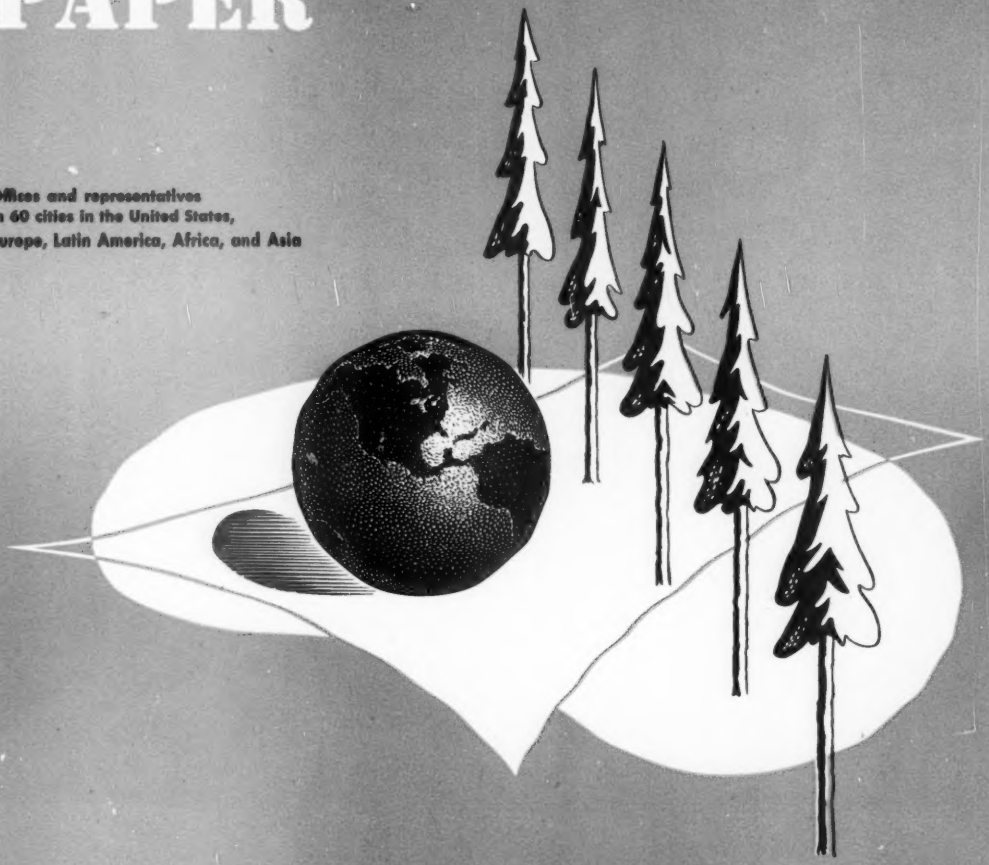

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KRAFT PULPING VARIABLES

THERE IS NO SUBSTITUTE FOR UNIFORM OPERATION

By Malcolm B. Pineo

Technical Director Brunswick Pulp & Paper Co., Brunswick, Ga.

The purpose of this discussion is to point out some methods and procedures by which a uniform grade of bleachable kraft brown stock can be produced. All comments are based on kraft pulp produced for high brightness grades from southern pines and hardwoods.

A systematic control of wood storage is very essential for stabilizing moisture and for preventing degradation. It would be best to store all wood receipts in relatively small, uniform piles and supply the mill from such piles on a regularly scheduled basis. But this method is relatively expensive. A compromise method is to determine the extent to which the wood can be stored during the various seasons of the year without affecting seriously either moisture content or fiber degradation. This period can be quite extensive during the colder winter months but must be minimized during the hot humid summer months.

A good barometer in the South is to observe the presence of birds circling the wood storage area. It has been determined by actual test runs that if a pile is consumed as soon as the bark begins to slip, that is—when the birds appear, then place.

A close liaison between the pulp mill and the wood procurement people is essential to the practical application of wood usage. It has been found, for instance, that a small percentage of slow growing, depressed pine wood, mixed with the normal growth wood, will affect yield and quality appreciably. An experimental study showed that a mixture of 25% slow growing wood mixed with 75% normal growth wood will increase the chlorine demand as much as 20% and double the screenings. However, cooked by itself, under adjusted conditions of alkali and time, the depressed wood will produce normal kraft pulp.

It is the responsibility of the wood procurement department to supply the mill with even growth, well-prepared, uniform-sized wood.

It has been said that the complete removal of bark and sawdust is relatively important in its effect on the dirt count of the bleached pulp; but this statement is not supported by actual mill investigations. As much as 50% of normal dirt in the pulp can be attributed to bark and wood dirt in general.

It is absolutely necessary to have chips of uniform size and of good quality if high grade, uniform pulp is to be produced. However, unless the right balance of alkali to wood, the correct concentration of active chemicals, and the proper steaming and relief schedules are employed, the final product will not meet the standards required.

MALCOLM PINEO

Mr. Pineo is a veteran of the Scott Paper Co. organization and has previously held executive positions in pulping activities in their west coast organization and also at Chester, Pa., headquarters.

1. *Liquor to wood ratios*: In order to maintain the optimum balance of active alkali to bone-dry wood, the amount of each must be accurately measured. A chemical determination plus a reliable flow meter or metering tank will establish the pounds of active alkali to be charged.

A weightometer on the chip belt will accurately measure the wet weight of the chips to be charged. Knowing the moisture content of the wood, this weight can be converted to a bone-dry basis and the correct weight of dry wood determined. However, every method of moisture determination investigated has had some important disadvantage. Either it is too slow for practical use, or it is too costly in man power, or its accuracy is very questionable.

The only practical solution to the chief weighing problem seems to be to completely fill the digesters with wet chips. Then, the tendency of the wetter chips to pack more tightly than the dryer chips will compensate for the changes in moisture content, and the weight of the dry wood per charge will remain relatively constant. This condition is easily brought about with overhead bins; but, with ground level chip bins, as is common in many mills, it is difficult to completely fill the digesters without leaving the belt conveyors covered with chips.

A system of chip charging, however, has been explored with some success. Here it is: If the rate of flow of chips across the weightometer is maintained constant, an electronic level detector in the neck of a digester will automatically stop the chip bin feeders so that the chips remaining on the belt will just fill the digester. The depth with which the level detector is placed in the digester is determined by the position of the digester in the line. If the chip loader is positioned over the #1 digester, then, the amount of chips to be added after the chip feeders have been stoppd is much less than it would be if the loader was charging the last digester in line. It takes some study to adjust this system of chip charging; but, with a few alterations, the control can be such that each digester will be filled automatically to its greatest capacity.

2. *Liquor concentration*: It is commonly thought that the activity factor in the cooking process is relatively unimportant. However, some preliminary studies indicate that the concentration of the active chemicals—that is, the ratio of total volume to bone-dry wood—can play a major role in the delignification process. Here again, the moisture content of the wood is needed if this ratio is to be controlled. So, by knowing the wet weight of the total wood charged and by loading the digesters full, the amount of moisture in the wood can be determined by difference. This value is then used in adjusting the amounts of white liquor and black liquor to maintain (1) constant liquor volume, (2) constant liquor concentration, and (3) constant ratio of active alkali to bone-dry wood.

Thus, by the proper selection of wood species, and sufficient wood storage facilities with systematic rotation of storage piles, and good bark removal, and chip preparation, and adequate control of the chip and liquor charging, the cooking process can be approached under constant conditions of operation.

3. *Steaming and relief*: There is no substitute for automatic cooking. This flat statement particularly applies to the manufacture of soft bleachable grades of softwood and hardwood kraft pulps. For hard kraft pulps, such as wrapping, bag, 9-point, etc., where the cooking cycle is extremely short, these controls could be unnecessary for uniform operation. But, for longer cooks, in which the delignification is extended to the highest degree, hand control will not suffice.

The schedule to be used for automatic digester steaming and relief must be established experimentally. Once the schedule is set, the cam can be cut so

that each digester will produce the same quality of brown stock. Control instruments will establish the pulp qualities desired as well as minimize the steam demand and increase the yield of turpentine and sulfate soap. If an indirect steaming, circulating system is employed and the system is *inadequate* for the total cycle, digester dilution from direct steaming can be minimized.

Conditions of Cooking

It has been established that the sulfidities of the cooking liquors is of less importance than has generally been presumed. A laboratory study supported by exhausted mill trials has shown that little or no difference in pulp qualities is apparent within a sulfidity range from 33 to 18%. Below 18%, there is a gradual reduction in strength factors, becoming more pronounced as the sulfidity values reach 13 to 15. On the other hand, the bleachibility of the pulp is better at the higher sulfidities, if the cooking conditions are adjusted to maintain constant permanganate numbers.

Another interesting study was made on the effect of varying the bringing up time from 212° F. to 331° F. It was assumed that as much as 90 to 100 minutes was required to allow the cooking liquors to penetrate the chips before reaching temperatures at which delignification takes place. This study indicated very strongly that bringing up time has been greatly over emphasized and that the rate of penetration of the cooking liquor is much faster than originally assumed. Penetration periods as short as 45 minutes seems practical for bleachable grades of sulfate pulp.

For special uses, the presteaming of chips produces a kraft pulp not unlike sulfite. However, the cost in wood usage compares most unfavorably with standard methods of cooking. A normal yield of 44% pulp on wood will be reduced to 36% if presteaming is employed. The increase in wood requirements is prohibitive for most pulp grades.

Without uniformity of digester operations and process control, variable quality will result. Although the digester cook is thoroughly experienced and his efforts are consistent with his skill, it is impossible to control the steaming and relieving manually to promote a predetermined and desired cooking schedule. There is no substitute for uniformity of operation, and there is no substitute for consistent repetition of uniform schedules.

Vacuum Washing

For good washing, a uniform flow of regulated stock is the starter. Sheet formation, distribution of shower liquors, and adequate repulping is the rest. It is practical to wash down to a sodium sulfate content of 15 to 20 pounds per ton of pulp and deliver liquor, having a solids content of 17%, to the evaporators. To do this, however, it is necessary to pay strict attention to uniform operation. Such operation can be sustained with adequate instrumentation and automatic control.

The stock to the primary washer is controlled by a venturi flow meter operated by a thickness gauge. The rate flow controller also determines the flow of shower water to the final stage washer. As the tonnage requirements change, the drum speeds of the washers are moved up or down with subsequent automatic follow up of the stock flow and shower water. This system removes much of the guesswork which is essential to hand operation. A steady flow of clean, uniform, washed pulp will be delivered to the screen room. The knots are returned to the digester for recooking.

Screening Developments

The screening of kraft brown stock is in a state of flux. The replacement of the conventional flat screens with upflow, vibrating, or centrifugal-type units seem just a matter of time. Screening at low consistencies is outmoded. High capital investments and high maintenance charges will dictate these changes. Quality will not suffer. These innovations lend themselves much better to uniformity, and stock losses are minimized.

Summary

(1) A change in wood species will vary pulp qualities more than any other single factor.

(2) Even though the wood species remains unchanged, the moisture content has a marked effect upon uniform operation.

(3) Too much emphasis can not be placed upon relationships of active alkali to bone-dry wood and upon the concentration of the cooking liquors.

(4) Uniform cooking, using proven schedules, is the only method by which pulp quality can be standardized.

(5) Economical operation of the washing and screening processes can be obtained by means of the proper selectivity of equipment and adequate instrumentation.

(6) To meet the demands of uniform, high quality pulp, the manufacturing processes must be regulated through process controls, properly designed and systematized for the product desired.

IMPORTANCE OF LIQUID VOLUME AND LIQUOR CONCENTRATION ON KRAFT PULPING

By R. H. Worrell
Southland Paper Mills, Inc.

In summarizing, the conditions brought about by the necessity for an easy bleaching pulp made this investigation of liquid volume and liquor concentration of utmost importance. As previously mentioned, our normal operational level was at 5300 pounds total active alkali and 950 pounds cubic feet total volume, giving a concentration of active alkali at 5.58 pounds per cubic foot. This cooking charge produced a very strong pulp. Therefore, these manipulations involving changes in liquid volume and liquor concentration were made to ascertain their effect on pulp strength, uniformity, and bleachability. The liquor producing equipment was not sufficient to provide more than 5300 pounds active alkali per cook. This led to the use of increased total volume whereby maximum uniformity could be obtained with a minimum sacrifice in strength by further dilution of the active alkali.

From the results of these cooks, a compromise digester liquor charge, based on Cook No. 3, was effected at a total liquid volume and white liquor concentration that would meet the convenient requirements of the mill conditions. Sufficient proof was shown that in this charge improved bleachibility could be obtained while at the same time retaining sufficient strength.

Summary of a paper presented before the 33rd Annual Convention of The American Pulp and Paper Mill Superintendents Association, Detroit, Michigan, on June 17-19, 1952.

INLETS AND SLICES

By D. R. Simonds
Beloit Iron Works

The chief factor confronting the designer is the volume of flow per inch of width. This volume is determined by the production rate and by the consistency. These factors, in turn, are affected by the design of the rest of the paper machine and by mill practices. Even in the same mill, there may be a very wide range of flows to cover weight and grade changes.

The machine builder also is confronted with the many requirements common to all mills in designing a proper inlet and slice. Some of these requirements are:

(1) Minimum down-time for wash-ups —which means freedom from accumulation of foam and slime lumps, in short, a box that is inherently clean.

(2) Accessibility for cleaning, and a headbox in which all parts and surfaces are easy to clean.

(3) A headbox with auxiliaries designed so that adjustments are both easy to make and effective; and where as much of the operation of the headbox as possible is automatic.

(4) Freedom from corrosion—a common requirement of all mills on all grades of paper.

(5) Compactness of the whole unit—as little space as possible should be taken up by the inlet and slice.

(6) Uniformity of delivery from the in-

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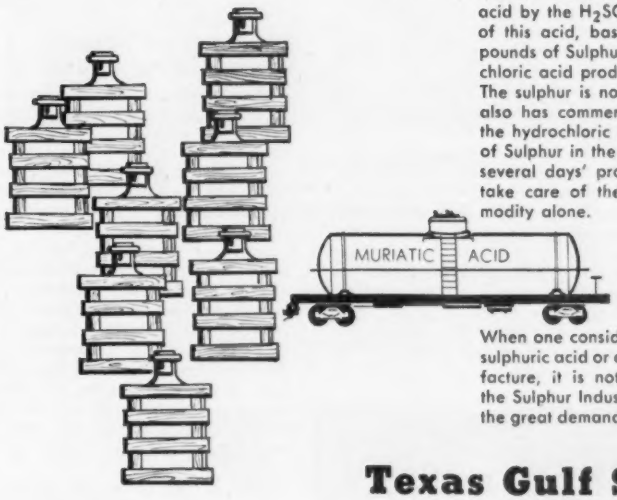

PARAPHRASING an old saying: 'It takes a chemical to make a chemical,' certainly applies to hydrochloric acid.

No chemical engineer has to be told how hydrochloric acid is made but sometimes with the mind focussed on the word "hydrochloric" little thought is given to another word "sulphuric." It is this word that calls attention to the fact that to make one net ton of 20° Bé hydrochloric acid by the H_2SO_4 process requires about 950 pounds of this acid, basis 100%, which is equivalent to 320 pounds of Sulphur. About one third of the annual hydrochloric acid production is made by the use of sulphuric. The sulphur is not lost because salt cake, a by-product, also has commercial value. But any way you figure it, the hydrochloric acid industry is an important consumer of Sulphur in the form of sulphuric acid. In fact, it takes several days' production from all the Sulphur mines to take care of the annual production of this one commodity alone.

When one considers all the other chemicals that require sulphuric acid or other Sulphur compounds for their manufacture, it is not difficult to appreciate how faithfully the Sulphur Industry is serving industry today in spite of the great demands made upon it.

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let to the slice—most important since it assures uniform weight and caliper.

The importance of the approach flow to the slice cannot be emphasized too strongly. The slice can't correct boils and cross-currents which are brought to it by a faulty design of headbox. If the approach flow to the slice is uneven in velocity, and has crosscurrents, the only thing that the papermaker can do is to adjust the flexible slice lip. It is impossible to set a flexible slice lip to eliminate boils and crosscurrents resulting from faulty design of inlets or headbox. These disturbances are changing locations constantly. Each minute, they are in a different place than they were a minute before.

The slice lip itself should be regarded mainly as an orifice to obtain the jetting velocity necessary to issue the stock from the slice at a speed correcponding with wire speed.

A definite distinction should be made between an approach flow in the headbox to the slice which is turbulent and full of boils and crosscurrents, and a flow which is perfectly smooth and glassy in appearance. The latter is no more desirable than the former; the approach flow to the slice should be lively or active—not turbulent, and not streamlined and glassy. It should be free of crosscurrents and boils, and rolling, such as is caused by baffles in a headbox.

All types of slices have been used on Beloit machines. However, Beloit has concluded that the straight vertical slice is desirable for most machine applications. It is the easiest to keep clean and the simplest to adjust.

From a paper presented before the 33rd Annual Convention of the American Pulp and Paper Mill Superintendents Association, Detroit, Michigan on June 17-19, 1952.

VANILLIN BY A NEW PROCESS is to be produced at a plant being built at The Ontario Paper Co's mill at Thorold, Ont. Above is a recent air photo of the progressive and versatile eastern Canadian mill, which is affiliated with Quebec North Shore Paper Co. at Baie Comeau, Que.

Pulp Mill To Produce Vanillin

Erection of a plant by the Ontario Paper Co. at Thorold, Ont., to produce 400,000 pounds of vanillin per year from the effluent of the company's alcohol plant is one of the projects now under way at this enterprising Canadian operation.

The alcohol plant was constructed in 1943 and was the first successful one of its kind on the continent, making alcohol by fermentation of the sugars in sulfite waste liquor.

The vanillin plant, now in an advanced stage of construction, is a second step towards the ultimate goal of complete utilization of sulfite waste. The alcohol plant uses the fermentable sugars; the vanillin plant will use the lignin content, receiving as its raw material the discharge from the alcohol plant still going to waste.

"One of the novel features of this lignin oxidation process," L. C. Anderson, manager of manufacturing, The Ontario Paper Co., tells PULP & PAPER, "is the use of lime as the alkali in the vanillin formation reaction.

The process is a joint reasearch and development effort of C. A. Sankey, research director; J. H. Fisher, research engineer, both of The Ontario Paper Co., and H. B. Marshall, of the Ontario Research Foundation.

The vanillin project is only one of several now being proceeded with at the Thorold mill. Improvements are being made to the paper machines as well as to pulp preparation and refining. A Deculator deaerator is being installed, head screens are being re-located and a new head box and slice are being fitted in the paper machine room.

Several more executive appointments have been announced by Great Lakes Paper Co., Fort William. Top left to right JOHN J. KILLIN has been named assistant development superintendent; ROBERT E. LEE becomes sulfite shipping superintendent; below: BERNARD A. ROBINSON chief timekeeper, and JOHN C. CURRIE personnel superintendent, woods division.

Consolidated Building Ready For Evaporator

The evaporator building, first structure in the Appleton, Wis., Interlake Mill's program to cut sulfite pollution, is nearly ready, Consolidated Water Power & Paper Co. announces. Steelwork and insulated metal siding has been erected on ground recently created by filling in an old pond for this purpose.

Interlake is preparing to concentrate sulfite liquor to about 50-50 solids and water, and burn this material for industrial fuel. The evaporating equipment, of Swedish (Rosenblad) design, is being manufactured by General American Transportation Corp. Scarcity of stainless steel delayed fabrication but delivery of part of the equipment is now promised for late summer with the rest scheduled a few months later.

AT UNIVERSITY OF MAINE RESEARCH DAY: Left to right, P. S. BOLTON, Robert Gair Co., Inc.; A. J. JENKINS, Bird Machine Co.; J. G. L. CAULFIELD, Eastern Corp.; DEAN ASHLEY S. CAMPBELL, Univ. of Maine; R. A. WILKINS, Bird & Son, Inc., and PROF. LYLE C. JENNESS, also of the University. About 50 persons were in attendance at the 2-day session sponsored by the Maine Pulp and Paper Foundation and the University at Orono, Me., May 9-10. Papers presented were on research being carried on affecting pulping and stock flow.

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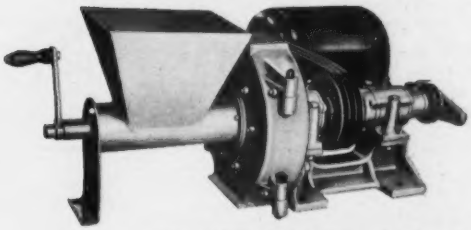

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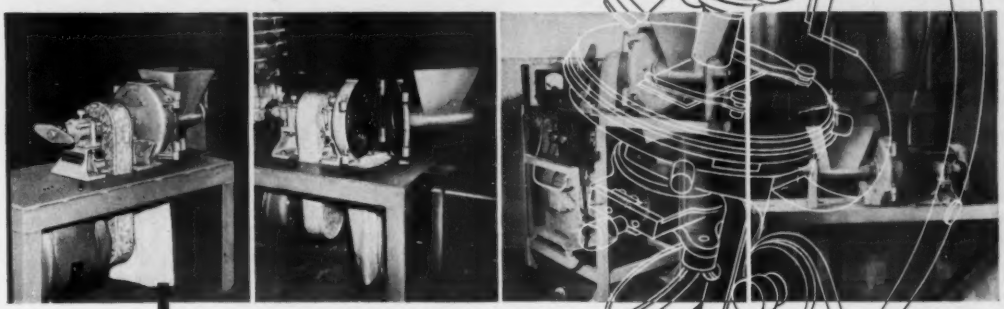

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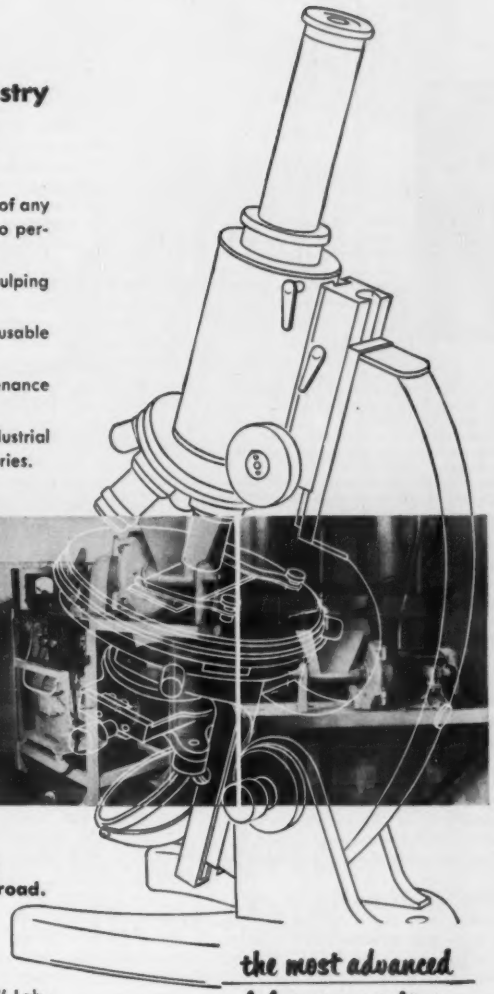

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A NEW REPORT ON A NEW CHEMICAL PULPING PROCESS

AMMONIA SULPHITE PROCESS

By Dr. Kenneth G. Booth

Director of Laboratories Central Research Div., Crown Zellerbach Corp.

DR. BOOTH, the author, is a McGill University graduate, and a former RAF World War I pilot in raids over Germany.

Dr. Booth, who wrote this article recently, went to the International Pulping Conference held at Murray Bay, Quebec, in June, to tell pulp men from all over the world about the latest developments in the ammonia base sulfite cooking process.

In this paper he described most recent gains from the experiments on the Pacific Coast. This was written recently by Dr. Booth for an Industrial Waste Conference held at Pullman, Wash., and is substantially the report given at the World Conference in Quebec.

Most sulfite pulp is produced by the calcium base process, i.e. with a cooking liquor containing calcium bisulfite and an excess of sulfurous acid. Evaporation of the spent liquor and subsequent burning of the concentrated liquor allows recovery of heat from the organic matter removed from the wood. However, because of scaling problems such recovery is difficult. The inorganic chemicals occur in the ash mainly as calcium sulfate which precludes recovery of the sulfur or lime. Great strides have been made lately in this field, but the problem is by no means solved.

One solution to the problem of spent liquor recovery is to use a different base, one whose salts will remain soluble during evaporation and which will allow enough heat and chemical recovery to make the process economical. The ammonia-base sulfite process is one possibility. In 1949 Crown Zellerbach Corp. and Soundview Pulp Co. (now Scott) in a cooperative venture converted the Lebanon, Ore. mill of the former company to ammonia base, to study the effects of this type of cooking liquor on pulping, papermaking and liquor disposal. Extensive laboratory investigations on the part of both companies preceded the decision to make this mill-scale experiment. Two previous reports (1, 2) have given in detail the results obtained, and the present paper is a summary of the whole process.

The Lebanon Mill was almost ideally suited for the purpose. It had a Barker tower system operating on dolomitic lime for acid-making, which allowed the changeover to be made cheaply and with little interference in production. It was a small mill, making one grade of pulp, strong unbleached sulfite, and converting it all on two paper machines. Effects of the change could therefore easily be observed and identified.

The plan evolved was to first substitute ammonia for dolomitic lime on a mol for mol basis, without any other changes. If the pulp proved satisfactory, then the variables of percent combined sulfur dioxide, cooking time and maximum temperature would be investigated to determine if the cost of the more expensive base would be offset by other advantages. If and when this problem was satisfactorily solved, then evaporation and burning of the liquor, and finally recovery of chemicals would be tested on a pilot plant basis.

Pulping and Papermaking Experience with Ammonia-Base Liquor

A system for converting anhydrous ammonia, received in tank cars, to aqua ammonia was installed according to recommendations of Shell Chemical Company. A few minor troubles were soon solved, and this equipment has worked smoothly and almost automatically ever since. Provision was made to pump the aqua ammonia to the next to top plate of the Barker tower, with a seal of fresh water run on the top plate to prevent loss of ammonia by stripping. Instrumentation as necessary was also provided. All bronze fittings and valves were replaced with stainless steel, because of the known action of ammonia and its salts on copper.

The startup was very smooth. There was practically no break in operation when the milk-of-lime was turned off and ammonia was admitted to the tower. Production of ammonia-base acid started immediately and within two days all traces of lime had disappeared from the system. Acid plant operation became easier and much better control was obtained.

Several effects were immediately noticed. The pulping progressed faster, with the result that the cook could be shortened or the temperature could be decreased. Liquor samples taken from the digester were darker for equal degrees of delignification. Screening was much easier, and the amount of screenings dropped to 40% of what they had been with calcium base acid. Less power was required for refining the ammonia-base pulp. No noticeable change, either good or bad, was found in paper machine operation. Slime growth, expecially on the screens, increased rapidly because of residual ammonia in the pulp. However, this was controlled by use of slimicides.

After operating in this manner a short while, the combined sulfur dioxide content of the liquor was progressively decreased until a content of 0.85-0.90% was reached. Data obtained over a period of a year showed that:

Screened pulp yield
from wood.....increased 6%
Screenings .....decreased 60%
Sulfur consumption..decreased 40 lbs/ton
Steam consumption..decreased 200 lbs/ton

For one month before and three months after the changeover, pulp samples were taken three or four times a week and given complete physical and chemical tests. Some of these samples were also bleached in the laboratory. The results of the physical tests on the unbleached pulps are shown in *Table I.* Notice that in all tests except brightness the ammonia-base pulp was superior to dolomite base pulp, especially folding endurance. This held true even when the combined SO_2 was dropped to 0.85%. Paper tests bore out these results, and customer acceptance tests indicated the paper was at least as good as that made by the calcium base process. Bleaching trials were made at Soundview, Everett, Wash. and at the West Linn, Ore. mill of Crown Zellerbach Corp. A special soft-cooked pulp was prepared for these tests. Because the Lebanon Mill had no way to segregate a batch of pulp for shipment, the entire mill was run on this soft pulp for periods of about two weeks, and ten tons per day were bled off the system for wetlapping and shipment. Previously they had always had trouble maintaining high enough test on the paper machine whenever the permanganate number of the pulp dropped below 14, but on these extended runs at 10 to 12 permanganate number, the machine operators were still able to make acceptable paper. Bleaching of this pulp proceeded smoothly, with some slight decrease in chemical usage over comparable calcium-base pulp, and the resulting product proved to be as good or better.

Recovery of Heat and Sulfur from Spent Liquor
Description of Pilot Plant

Once the pulping had proved satisfactory, plans were made to install a pilot plant for the recovery, evaporation and burning of the liquor, and the recovery of sulfur dioxide from the resulting flue gas. It was designed to take one-fifth of the

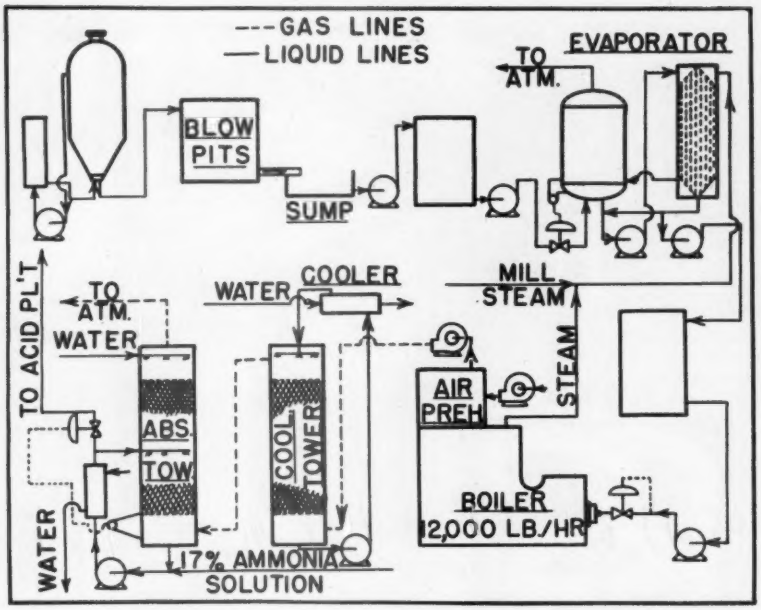

FIGURE 1: FLOWSHEET OF AMMONIA BASE SPENT LIQUOR RECOVERY PILOT PLANT

liquor produced at the Lebanon Mill. It was in operation from the end of February, 1951 until the following October, five days a week. A flow sheet is given in *Figure 1.*

The liquor from the blowpits flowed to a sump, and from there it was pumped to a storage tank, and then to the evaporator. Only the strong liquor, averaging about 9% solids, were taken. Starting and stopping of collection was operated manually according to the temperature. When the temperature of the liquor dropped below 185° F, the pump was stopped.

The evaporator was a single effect Conkey Flat Plate Heating Surface type (General American). All plate materials coming in contact with liquor or vapor were of type 316 ELC alloy stainless steel. It had no condenser and was operated as a falling film evaporator. Two circulating pumps and the related equipment were supplied for employing the Rosenblad channel switching method for control of scaling. Its size was such that it could serve as one effect of an eventual multiple effect unit. This was the first large size unit of this type built in this country.

Liquor feed and steam flow to the evaporator were automatically controlled. Flow meters on each circulating leg were interlocked with the steam flow controller so that, if liquor circulation over the plates stopped, the steam flow was automatically cut off. Output was hand regulated according to the solids test and the rate desired. A 250-gallon storage tank held a reserve of the concentrated liquor, and acted as a surge tank between the evaporator and the burner.

The steam generating unit in which the liquor was burned was an old water-tube unit with a dutch oven ahead of the boiler. It had been taken off the mill line since it had been limited to 50 psig. The grates were removed from the dutch oven and some brickwork added to give a furnace of proper dimensions. A forced draft fan, an air preheater, and an induced draft fan were also added with the necessary dampers for combustion control. The induced draft fan was of high enough head to push the flue gases through both the cooling tower and absorption tower.

The burner finally adopted was a steam atomizing type, with the liquor discharging through a central opening and the atomizing steam coming in through several radial openings at right angles to it. Liquor flow to the burner was regulated by a flow recorder controller.

Instruments were added in the system to measure steam production, draft at various points, CO_2 in the flue gas, flue gas temperature, air temperature, atomizing steam flow, furnace temperature and liquor temperature.

The sulfur recovery system consisted of a cooling tower and absorption tower with related equipment. The cooling tower was of wood stave construction, 5-ft. inside diameter, containing 24 feet of 3-inch spiral tile, stacked. It was designed to cool the flue gases from the air heater temperature to 104° F. Cooling water was pumped at about 80 gpm from the bottom of the tower through a heat exchanger and then sprayed into the top.

The adsorption tower was a 5-ft. inside diameter wood stave tower 30 feet high, packed with two 5-foot sections of 3-inch spiral tile. The absorption solution of ammonium sulfite-bisulfite was circulated over the bottom section and pumped through a heat exchanger after each pass over the packing. The same cooling water was used in the heat exchangers for both towers. Seventeen percent ammonia solution was added at the suction side of the recirculation pump, its feed regulated by a pH recorder-controller. Make-up water equivalent to the acid sent to the acid plant was added above the top section. The purpose of adding water at that point was to recover any ammonia that might be stripped from the scrubbing solution. Provision was made for increasing the height of packing in the lower section to a maximum of 15 feet, but this extra height was never found necessary. Acid sent to the acid plant was taken after the heat exchanger, and measured by a recording rotameter. Instruments were also added to record the circulation rate of the scrubbing liquor over the packing, the flow of ammonia solution to the tower, and gas and liquor temperatures in and out of the tower.

Operation

The waste liquor from the blowpits contained about 9% solids, and in the evaporator this was brought to 50% solids as soon as possible. Liquor at the required rate was then drawn off, and the steam flow controller set accordingly. Channels were switched every eight hours, and the strainers in the product line were switched at the same time. The dirty strainer was cleaned and left ready for the next shift.

On starting up, the furnace was first fired with oil, until the temperature reached 2000° F., then the old burner was removed and replaced with the liquor burner. The liquor was turned on and the flow controller set at the desired rate. The dampers in the air line were set to give as high a value of CO_2 as possible without production of H_2S. Burners were changed every eight hours.

For the greater part of the time the dutch oven was used prior to the boiler proper. Under these conditions the liquor burned very readily, almost like an oil flame. Even at 40% solids the furnace could be operated for several hours at a time. Steam generation on 50% solids liquor averaged 5.3 pounds per pound of solids fired. The ash buildup on the tubes was fluffy and fairly easy to remove. After this type of operation had been proved satifactory, the dutch oven was removed and the burner mounted directly under the boiler. This was to determine if the liquor could be burned in a water-wall furnace. Combustion under this condition was definitely poor and hard to maintain. Considerable amounts of black soot, representing a definite explosion hazard, were deposited on the boiler tubes and carried over into the absorption system. Because there were no radiation losses from a refractory furnace in this case, boiler efficiency increased from the 65% found for dutch oven operation to 73%.

To put the absorption system in operation, after burning was satisfactory, water was started circulating through both towers. The flue gas from the boiler was switched to the cooling tower, and the ammonia pump to the tower started with the rate set approximately by hand. The pH controller was then set at the desired pH and the system put on automatic control. The water rate to the absorption tower was finally set at the desired figure. Acid was sent to the acid plant as soon as

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it reached proper strength.

The cooling tower water was recirculated over the packing after passing through a heat exchanger. The pH of this water was 2.5-3.0, because of the presence of a small amount of sulfuric acid, which was partially neutralized by traces of ammonia which were present. Corrosion test samples indicated that 316 alloy stainless steel should give adequate equipment life. The flue gas leaving the cooling tower contained 0.5 to 0.7% SO_2 by volume, at a temperature of 104° F.

The absorption tower removed 99% or more of the SO_2 from the gases, because of the alkaline nature of the scrubbing medium. The pH of the tower effluent was regulated at 6.25, which corresponded to a usage of 85 pounds of ammonia per ton of pulp. The water added to the tower was regulated to give a total SO_2 content of 2.5 to 3.5%, and combined SO_2 of 1.3 to 2.0%.

About 4 to 5% of the sulfur to the furnace appeared as sulfates in the tower liquor, or 0.1 to 0.6% expressed as percentage SO_2 in the recovered acid. The formation of sulfates was controlled by keeping the CO_2 content of the flue gas as high as possible, by keeping absorption temperature low, and by keeping height of packing in the absorption tower at a minimum.

Data on Salt Water Wood

The wood used at the Lebanon Mill has not been salt-water floated. Data were desired on the effect of salt water in the logs, and so for a short period 200 lbs. of salt was added to each cook, or about 20 pounds per ton of pulp. This salt presented no troubles in evaporation. Burning of the concentrated liquor was also no problem, except that a sticky ash formed on the tubes. However this was easily removed by vigorous lancing.

When liquor containing salt was used in the pilot plant the cooling tower showed definite signs of corrosion immediately. Because the cooling water was circulated, with only about 1 gpm going to the sewer, hydrochloric acid built up to appreciable amounts and the pH dropped to 1.5. The tower was therefore operated with the cooling water going to the sewer after a single pass over the packing. This eliminated the corrosion difficulty but introduced a loss of SO_2 and eliminated the possibility of any heat recovery at that point. The salt addition had no effect on the operation of the absorption tower.

Conclusion

The operation of this pilot plant has provided the data which are necessary for designing a full scale plant. This is now being done in the case of the Lebanon mill, and equipment is on order.

The two years' operation of the ammonia-base sulfite process has proved that it is one answer to the problem of sulfite waste liquor disposal. However it is not the only answer, nor will it be universally applicable. For example, a mill in the Pacific Northwest which uses unbleached pulp in which brightness is of paramount importance would have difficulty with this process. Even if a combined equivalent to that in the calcium base process were used, the brightness would be 2 to 3 points lower, and when the combined is dropped to save on the expense of ammonia, it would be 5 to 10 points lower. Again, all bronze fittings must be replaced with stainless steel at any point in the pulping process where ammonia or its salts might be present, and of course considerable quantities of stainless steel must be used in the recovery process. The applicability of the ammonia-base process to a particular mill must be decided on the basis of the requirements it must meet.

Wisconsin Leads All States in Planting

More than 28 million seedling conifers were planted in the State of Wisconsin in 1952, which is said to be the highest record for tree planting of any state in the Union. These were softwoods—spruce, balsam, jackpine and Norway pine.

A leading woods authority in Wisconsin has made a prediction that in future years this state will be able to support many more pulp mills than it now has, in view of plantings and also the new uses for aspen.

TABLE I

Strength Comparison of Dolomite and Ammonia-Base Sulphite Pulps Grouped by Combined SO_2

	Dolomite base		*Ammonia base*	
Range of combined SO_2	1.28-1.46	1.30-1.45	1.10-1.19	0.86-1.10
Averages				
Combined SO_2	1.36	1.25	1.15	0.95
TAPPI permanganate no.	18.6	14.6	14.9	16.5
Brightness, G.E.	57.5	55.6	55.8	52.4
Burst				
600 ml.	123	126	128	134
400 ml.	134	136	138	144
Tear				
600 ml.	1.12	1.19	1.19	1.13
400 ml.	0.99	1.07	1.05	1.01
Tensile				
600 ml.	10,140	10,300	10,320	10,730
400 ml.	10,950	11,050	11,240	11,580
Fold				
600 ml.	490	750	720	750
400 ml.	540	830	820	860
Beating time				
To 600 ml.	8.9	6.6	6.8	6.5
To 400 ml.	15.9	12.4	12.8	12.0
Fiber Fractionation				
Held on 14-mesh	66.1	68.3	69.5	70.0
Held on 20-mesh	9.1	7.7	7.5	7.2
Held on 35-mesh	7.4	6.5	6.2	5.7
Held on 150-mesh	5.2	5.7	5.1	5.2
Through 150-mesh	12.2	11.8	11.4	11.9

Freeness figures are Canadian Standard

NEW BRAZIL PULP MILL

Copase, a new South American firm entering pulp and paper manufacturing, is expected to start producing pulp in mid 1953 at Sao Paulo, Brazil. The company will make pulp of eucalyptus, via kraft and modified groundwood processes, a tree which reportedly can be harvested as pulpwood in that country on 4 to 5 year rotation. This eucalyptus characteristically has long, slight-tapered, thin-barked, limb-free boles reaching butt diameter of about 14 inches when harvested on the planned rotation.

This industrial development holds possibility of introducing a new economical age to Brazil, changing the country from importer to exporter of pulp. Such a transformation could conceivably bring pulp and paper industry into number one position in Brazil's economy—relegating coffee industry to second position.

Jean-Louis DeLacerda, stepson of Nelson Caldeira—principal stockholder in Copase, concluded a stay of over 2 months in United States during July. While here most of his time was spent at Crown Zellerbach Corp's Camas, Wash. mill familiarizing himself with North American methods and equipment. Enroute from Pacific Coast to Germany he stopped over in New York City to confer with executives of Parsons & Whittemore, Inc., through which machinery is being obtained. Subsequent to 2 or 3 months in Germany he plans visiting pulp and paper mills in Sweden, England and Spain preparatory to start-up of the Sao Paulo plant.

Mr. DeLacerda foresees construction of ten pulp mills in Brazil within two years subsequent to starting pulp production at Copase mill. "All the paper manufacturers expect to make their own pulp," he said. The Copase plant will make 50 tons of pulp per day at the start and eventually increase output rate to 150 tons. Plans call for production of paper by early 1954. Production is expected to run heavily to rayon and nitro-cellulose product, according to DeLacerda.

About 90% of plant's machinery will be of United States manufacture and 10% European.

Pine Harvest In New Zealand

N. Z. Forest Products, Ltd. recently finished harvesting of its Pinedale block of timber, this being the first time that an original crop of pine trees in a New Zealand commercial forest has been completely logged. Secondary growth over the area, totalling about 3000 acres, is generally well established so that a new forest will eventually be available for cutting.

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INSECTS IN JACKPINE PULPWOOD

By Wakelin McNeel, Jr., Research Assistant, University of Wisconsin,

R. D. Shenefelt, Associate Professor, University of Wisconsin,

Truman A. Pascoe, Tech Director, Nekoosa-Edwards Paper Co.

WOOD BORERS COMMON IN PULPWOOD AND THEIR DAMAGE:

PLATE 1—At top: Round-headed Borer (Cerambycid larva).

PLATE 2—In middle: Flat-headed Borer (Buprestid larva).

PLATE 3—Below: Direct wood loss caused by borers as evidenced by this sawdust on pile. This photo was by Don Surprison of Nekoosa-Edwards Paper Co.

This is a preliminary report on a serious Wisconsin wood problem, exclusively published by PULP & PAPER. The studies were supported in part by Nekoosa-Edwards Paper Co., with cooperation of the Wisconsin Conservation Dept., and Theodore C. Scheffer, pathologist of the U. S. Forest Products Laboratory in Madison, Wis. Published with approval of the Director of the Wisconsin Agricultural Experiment Station.

Many paper companies in Wisconsin are faced with serious losses in their wood storage yards as a result of insect activity. Prior to World War II, certain companies stored only peeled, or smooth pulpwood. This prevented major insect problems from developing at the storage yard, for wood in which the cambium has been exposed is free from further infestation by borers and bark beetles, the most abundant and damaging forms of insects present in the yards. In contrast to peeled wood, unpeeled wood provides suitable habitat and protection for bark beetles and wood borers. These insects, or evidences of their work, are readily seen in logs that are stored in the unpeeled condition.

The overall losses caused by insects in pulpwood can be summarized as follows:

(a) Insects cause direct wood losses by their feeding. As the result of the activities of Cerambycidae (round-headed borers, plate 1) and Buprestidae (flat-headed borers, plate 2) piles of sawdust up to five inches deep are common on tiers of stored logs (plate 3). Scolytidae (bark beetles) are extremely numerous at times and often destroy considerable quantities of wood just under the bark.

(b) The "sawdust" that accumulates as a result of insects feeding increases the fire hazard in the yard.

(c) Additional freight charges must be paid to replace wood lost in the yard due to insect activity.

(d) Storage yards containing unpeeled wood serve as a breeding ground for insects, and populations have been built up which have spread into outlying areas killing trees. In some instances adult bark beetles have girdled nearby trees so rapidly that needles still remain green although most of the bark has fallen from the trunk. The fact that potentially dangerous "exotic" or non-native species may be brought in on pulpwood from other areas and perhaps become established in Wisconsin forests or plantations means that insects in introduced wood should be watched closely.

(e) Insects can become a nuisance to men working in the yards as well as to residents in the vicinity.

(f) As shown later, insects seem to be largely responsible for the introduction of wood-destroying fungi and help spread fungi within the logs. Consequently, wood infested by insects deteriorates more rapidly in storage.

Numerous studies have been undertaken since initiation of this project in 1948, to learn about the insects in pulpwood and their activities, so that suitable control measures might be attempted. To date, over 200 species of yard-inhabiting insects have been identified and many thousands of specimens collected remain to be named. Activities of the insects were studied by means of light traps, sticky tanglefoot boards, log sampling, and rearing cages. It was found that infestation by bark beetles occurs primarily in the stor-

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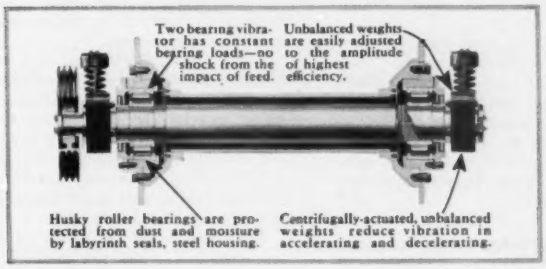

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age yards. Incoming wood is rapidly attacked during the summer by bark beetles which emerge from the older wood. The areas of their greatest abundance can often be detected by observing the swallows which fly over the yards in great numbers catching insects. In contrast, most borer infestation takes place at the cutting areas. Methods were tested to measure actual wood loss caused by insects. One of the most successful methods employed to date involves the use of molten Wood's metal, which is poured into borer galleries that have been cleaned of frass and sawdust. After the metal hardens, the cast that is formed is chipped out of the bolt, and the volume of the gallery is obtained by measuring the volume of the cast. By this procedure it was found that if just one completed round-headed borer gallery was present per 8 foot pulpwood stick of six inch diameter the loss would be around three tenths of one per cent, or a loss of 3 cords per 1,000. Actually, however, this is a low figure. In 1950, jack pine cut in May had an average of 40 galleries per stick after 3 months storage or an assumed loss of 12 per cent or 120 cords per 1,000. As high as 288 borer holes have been counted in one spruce log.

Examinations have been made of possible control methods. Numerous tests were conducted with volatile materials in the hope of finding an attractant which might be employed as a bait in the yards. These studies were made in an olfactometer, a device that measures the attractiveness of the materials to insects. None of the materials tested proved to be more attractive to beetles than natural wood. Preliminary tests with several insecticides were made in the laboratory to determine which would give the best protection against borers and bark beetles. The results, later confirmed in the field, showed that benzene hexachloride consistently gave greater kills than the other insecticides tested. This agrees with the findings of H. R. Johnston and R. J. Kowal in the South (*Southern Lumberman*, Dec. 1949). Later, sprays were applied in the yards to determine their effectiveness. Various types of power equipment were used, including a small conventional hydraulic sprayer, the Todd Insecticidal Fog Application and Lawrence Aero Mist Blower. In all cases the output was insufficient to cover the logs and provide adequate control. Once the borers have entered the wood it is almost useless to spray the logs.

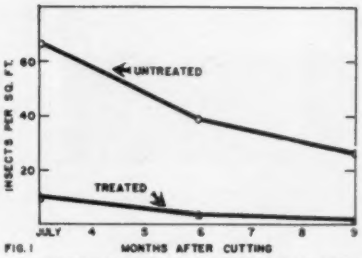


FIG. 1 INSECTS IN PULPWOOD CUT IN APRIL

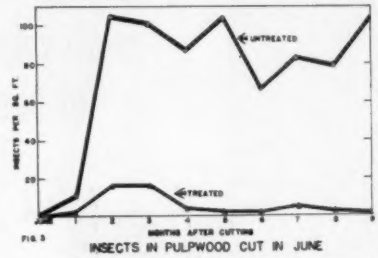


FIG. 3 INSECTS IN PULPWOOD CUT IN JUNE

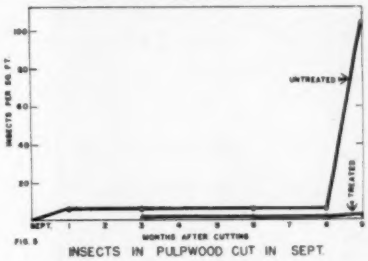
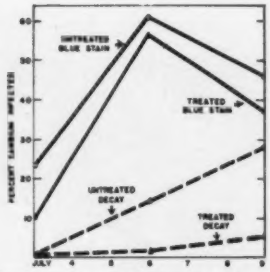


FIG. 5 INSECTS IN PULPWOOD CUT IN SEPT.



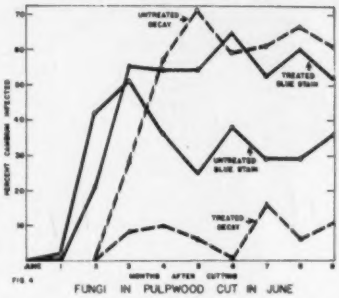


FIG. 4 FUNGI IN PULPWOOD CUT IN JUNE

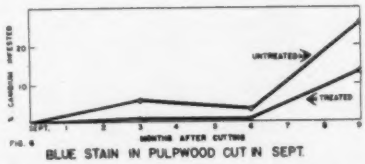


FIG. 6 BLUE STAIN IN PULPWOOD CUT IN SEPT.

As it proved almost useless to spray in the yard, tests were conducted in the cutting area to determine the practicability of spraying the logs with benzene hexachloride just after cutting in order to protect them from infestation by insects. As the final criterion of the effectiveness of spraying pulpwood is to be found in increased yield or better quality of pulp, to a degree which at least offsets the expense of treatment, a program was designed to test results of application by such standards. Because the benefit to be derived might vary with the season of harvest, it was necessary to cut and treat the wood at different periods during the season when it is subject to attack by insects. In was also desirable to correlate numbers of insects and abundance of fungi.

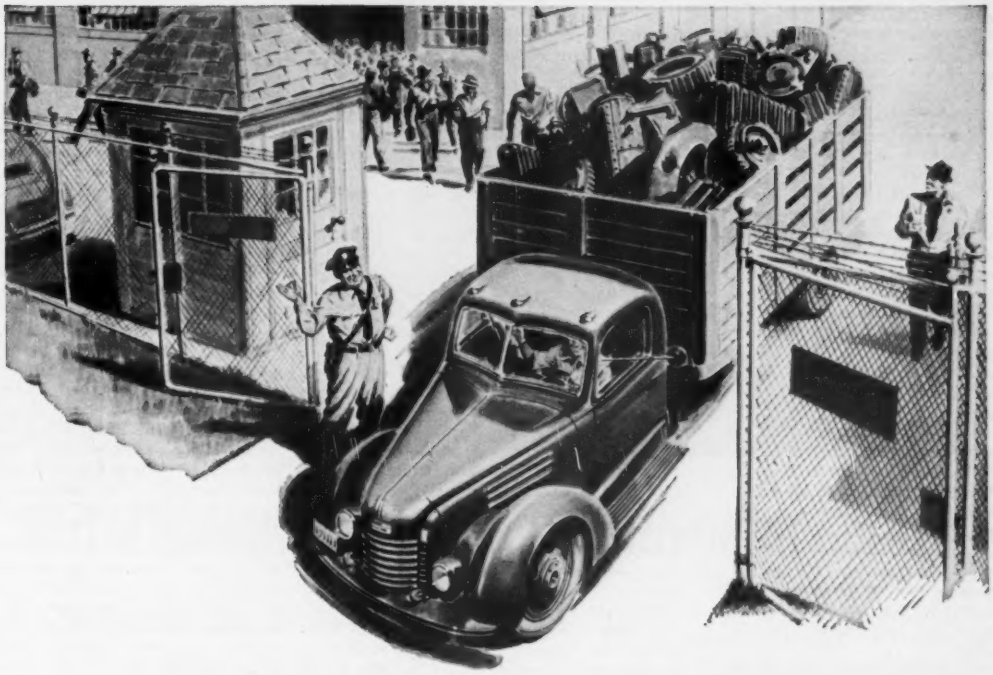
Two cords of jack pine were cut each month from April through October, from an even aged stand, one cord serving as a control, the other being sprayed with BHC emulsion by means of an Indian fire pump fitted with an adjustable nozzle. Spraying was done within 48 hours after cutting, the logs being sprayed until they dripped. Approximately 1 oz. gamma isomer was applied per 200 sq. ft. of log surface. At the time of cutting two inch discs were removed from the logs and the specific gravities and moisture contents determined. The logs remained in the woods for one month, after which they were hauled to the storage yard and piled under usual yard conditions. Samples of 10 logs from each cutting were examined for insects and fungi at periodic intervals of storage time. At the time of sampling, discs were removed from each log to find out what changes had occurred in specific gravity during the storage period. The specific gravity obtained not only served to indicate the rate of wood deterioration but also was used with the measured volume to calculate a theoretical dry wood weight for the log. This theoretical weight was compared to the actual weight, the difference supposedly representing the loss caused by insects.

PLATE 4—THIS PHOTOGRAPH shows a comparison between a treated and untreated log. The smooth appearing treated log is on the left. The untreated one (hand with marker is pointing to it) is on right. This picture was taken three months after logs were cut.

Plate 4 illustrates some of the differences that are evident in treated and untreated wood. These logs were cut only three months before the picture was taken. The log at the left was treated with benzene hexachloride; the untreated log at the right was very heavily infested by bark beetles and wood borers and decay was rapidly developing.

The trends observed in spring, summer and fall cut wood are best shown by means of graphs.

Figure 1 shows the number of insects per square foot in pulpwood cut in April. In July, when this wood was first exam-



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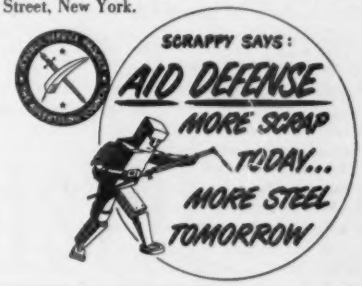


ined there were 66 insects per square foot in the untreated as compared to 9 per square foot in the treated.

Figure 2 illustrates fungal development in April cut pulpwood. There is a rapid development of blue stain during the summer. The blue stain is later reduced as decay, which destains the blue stain, increases in amount. Decay in untreated wood is much greater than that in treated wood.

Figure 3 shows the number of insects in pulpwood cut in June. Over 100 insects per square foot were found in untreated logs two months after cutting. The greatest increase in numbers took place in July. The treated wood supported less than one-sixth as many insects as the untreated wood. By comparing Figures 1 and 3 it can be seen that summer-cut wood supports a much greater population of insects than spring-cut wood.

Figure 4 illustrates the rate of fungal development in June-cut pulpwood. There was a much greater amount of wood rot, i.e., decay (*Peniophora gigantea*) in the check than in the treated. Both blue stain and decay increase in direct proportion to numbers of insects. The blue stain in treated wood was greater than that in untreated wood two months after cutting because the development of decay was considerably slower in the treated wood and had not shown any appreciable effect on the blue stain.

Figure 5 represents insects in fall-cut wood (cut in September). The untreated logs were attacked during September and October by round-headed borers, the bark beetle attack being negligible. In May of the following year the untreated logs were heavily attacked, this time by bark beetles only. Logs examined in the fall, almost one year after cutting, showed no more borer attacks, indicating that the bark beetles had so destroyed the cambium in the spring as to reduce borer competition to nil.

Figure 6 shows the rate of blue stain development in fall-cut wood, there being no development of decay through June of the following year. Particularly interesting is the increase in blue stain which was correlated with the great increase in numbers of insects shown in Figure 5.

It was observed that insects had started working in the logs eight months after cutting. No examination was made at that time to determine whether the blue stain had started increasing. It is believed however, that the blue stain also started increasing rapidly after the eight month period as the weather became warmer, rather than after the 6 month period.

Tests thus far indicate that benzene hexachloride gives good control of borers and bark beetles for at least a year. Fungicides applied alone, in contrast to what other investigators have found, did not reduce the amount of fungi in the logs unless applied with an insecticide. This, together with certain other tests performed, clearly indicates that the insects are introducing the fungi. Actually, logs treated with sodium pentachlorophenol were hit at least as badly by insects and decay as were untreated logs.

The results of the pulp and paper tests conducted by the Nekoosa Edwards Paper Company laboratory staff have yet to be analyzed. However, in over three-fourths of the tests thus far conducted, treated wood has given higher yields of pulp than untreated wood when equal weights were cooked.

However, we have yet to place a monetary figure on the pulp value, and until this is done the spraying procedure cannot be accurately evaluated. It should be mentioned, however, that the average price paid for peeled jack pine over the past five years has been $3.25 higher than that paid for rough wood. Spraying costs around $1.25 per cord, and less labor is involved. Hence spraying wood now appears to be more economical than peeling. Where cutting operations are large, the cost of spraying can be greatly reduced by using mechanical rather than hand methods, and with further development of techniques, the cost of spraying may possibly be reduced appreciably.

SUMMARY:

Wisconsin paper companies are faced with losses in the pulpwood storage yards as a result of insect activity. They have also been confronted with the danger of insect build-up in the yards, which car and has resulted in a spread of injurious insects into adjacent areas. Of particular potential danger are those "exotic" or non-native insects that might be brought in on pulpwood from outside the State.

The present studies were initiated to determine means of preventing insect losses to pulpwood and to discover the influence of insects emerging from pulpwood on adjacent trees, forests, and plantations. A program was set up to evaluate the losses caused by actual feeding of insects, the loss caused by introduction of fungi by insects, and the effect of treatment on deterioration of wood during storage. Because the benefits to be derived might vary with season of harvest, wood was cut at different seasons of the year during the periods when insects might attack the wood. Since the final test of the effectiveness of spraying pulpwood is to be found in an increased yield and better quality of pulp, to a degree which will at least offset the cost of treatment, the program was devised to test results of spraying by such criteria.

Field tests, as well as laboratory tests, showed that benzene hexachloride was superior to the other insecticides tried. Since spraying in the yards was found to be impractical, tests were conducted in the cutting area, the benzene hexachloride being applied within 48 hours after cutting. Some of the conclusions thus far reached are (1) Benzene hexachloride gives good control of bark beetles and borers for at least a year. (2) Blue stain and decay are definitely associated with insects, and consequently fungal development is retarded by insect control. (3) Fall-cut wood is attacked severely by bark beetles the following spring, which reduces competition from the more destructive borers. (4) Spring-cut wood is less attractive to both bark beetles and borers than summer-cut wood, and consequently less liable to attack by fungi. (5) Treated wood, in the majority of cases, gives higher yields of pulp than untreated wood.

MacMillan in New Post

H. R. MacMillan, C. B. E., one of Canada's leading industrialists, in July was appointed as one of Canada's three members on the International Pacific Salmon Fisheries Commission, established under treaty between the United States and Canada to restore and administer the Sockeye salmon fisheries of the Fraser River.

Mr. MacMillan succeeds the late Olof Hanson, a former British Columbia logger, who died early in June.

Besides his extensive interests in lumber and pulp, Mr. MacMillan is chairman of the board of British Columbia Packers, Ltd., the largest Canadian fish-packing concern; and for years has been recognized as an incisive thinker and powerful voice in support of conservation for the perpetuation of Canadian fisheries on a sustained yield basis.

Bonner Retires

J. W. Bonner, chief engineer in charge of the power plant at Fibreboard Products Inc., Port Angeles, Wash., retired June 1, 1952, after 35 years of service. Jess, or "Curley," as he is more commonly known, started in the Fibreboard plant at Antioch, Calif., then known as the Port Angeles Division, and shortly thereafter promoted to chief engineer. Prior to entering the paper industry, he worked as chief engineer for Associated Pipe Lines in California.

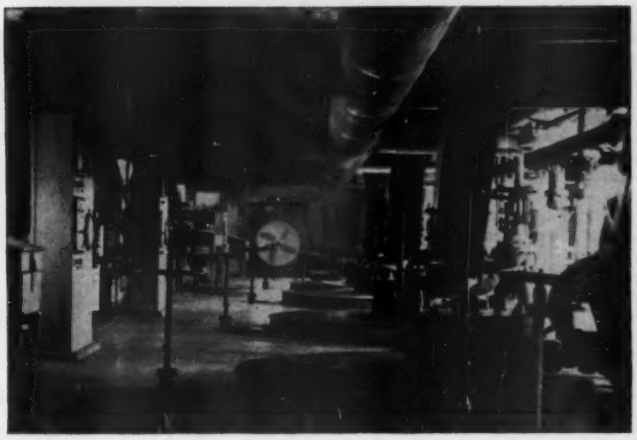
Mr. Bonner recently purchased a ranch near East Stanwood, Wash., which is being operated by his daughter, son-in-law, and three small grandsons, he says. The mill employes presented Jess with a wrist watch and a dinner in his honor was held by the Fibreboard Pivot Club where he received a pen set and 35-year pin.

Color Engineering at Wausau Paper Mills

A color engineering job has virtually been completed at the Wausau Paper Mills, Brokaw, Wis., where a modernization program has been carried out under direction of President David B. Smith and Superintendent Cecil Taylor. A spotlight green, said to have better reflectance of light and show up dirt to aid housekeeping, is the dominant color on three paper machines and in bleach plant and beater room. In some areas three green shades were used, a dark base, medium shade for frames and whitish green for hoods, etc. Foot rails are in black.

Pulpwood Calendar

Sixth British Commonwealth Foresty Conference . . . Ottawa, August 11-18, with subsequent sessions across Canada.



THE CORRECT COMBINATION FOR SUCCESS—In addition to good instrument performance the success of this installation is also due to the willing and complete cooperation of the Brunswick Pulp and Paper Company with the Bristol organization in the engineering, installation, and operation of the control equipment.

"Outstandingly Successful Automatic Control"

Bristol Digester Control Gives Complete Satisfaction at Brunswick Pulp and Paper Co.

As reported by Brunswick, the results obtained from automatic control system include (1) saving in steam, (2) pull-over of liquor minimized, (3) ideal cooking schedule accurately and consistently repeated, (4) practically no maintenance required, (5) results fully satisfactory.

Like all Bristol control systems, this one is simple, adaptable. Operating men get familiar with it fast. Control panel units can be installed side-by-side to form a continuous panel for controlling an entire digester house, and can be enlarged to cover more digester.

Bristol Instruments Get the OK in Mills from Coast to Coast

Experience at Brunswick Pulp and Paper Company is typical of the performance of Bristol Recording Instruments and Automatic Control Systems in Paper Mills from coast to coast.

Bristol manufactures a complete line of automatic controlling, recording, indicating and telemetering instruments and component equipment for the Pulp and Paper Industry to take care of applications requiring from only one or a few instruments to those requiring extensive instrument control panels.

NEW SERIES 500 INSTRUMENTS ARE NOW AVAILABLE. Products of over 60 years of instrument experience, they are extremely simple in construction and will withstand the severest service. They require practically no maintenance—anybody can take care of a Bristol Series 500 instrument.

Bristol Has the Resources Needed to Give You the Best in Instrument Engineering

Bristol has developed techniques and facilities for handling even the most difficult and unusual control problems. Our engineers will relieve you of many worries by providing layout drawings and piping and wiring diagrams. We furnish panels in finished form with all internal piping and wiring complete. All you have to do is make main power and air-line connections. Our engineers stay with the job until operating satisfactorily.

Make use of Bristol resources. Write for Bulletins. THE BRISTOL COMPANY, 142 Bristol Road, Waterbury 20, Conn.

Quick Facts About Bristol Alkaline Digester Control System

Bristol Alkaline Digester Control System is used to automatically control digestion of Southern pine and Northwestern fir and hemlock in direct and indirect-steamed digesters, with either forced or natural circulation of both long and short cooks. *Installation requires no changes in digester equipment. It adapts itself to the digester, resulting in lower installation cost.* It is also adaptable to changes in operating conditions.

THE DEPENDABLE GUIDEPOST OF INDUSTRY

BRISTOL

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

NEW EQUIPMENT DISCUSSED

Representatives of seven countries took part in the International Pulping Conference at Manoir Richelieu, Murray Bay, Que., June 16-18, which was followed by the Summer meeting of the Technical Section, Canadian Pulp and Paper Association.

Dr. W. Gallay, of the E. B. Eddy Co., Hull, Que., was general chairman of the conference, which brought together some of the outstanding research and operating men in the industry.

Much interest was shown in the explanation of the Centricleaner and its functions by Dr. G. H. Tomlinson, of Howard Smith Paper Mills, which has been carrying on research in connection with this new development following preliminary work on it by Hammermill Paper Co.

Bauer Bros. is undertaking commercial production of the Centricleaner, according to Dr. Tomlinson, who summarized the results of more than a year's practical experience with the machine which is now being tested with different species of pulpwood. Production of cleaner pulp is one of the aims of the Centricleaner, whose operation is based on a free and forced vortex.

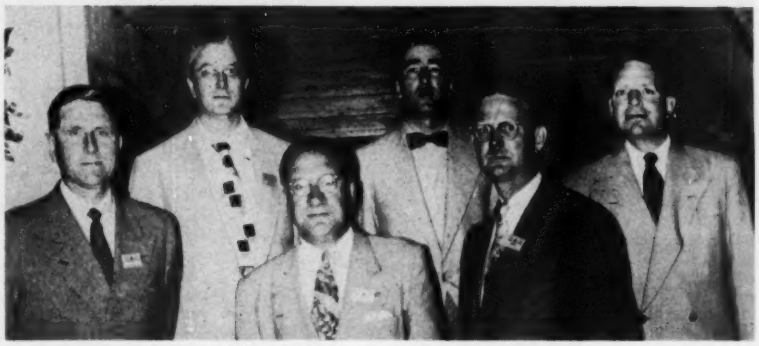
Trends in semi-chemical pulping were described by C. William Converse, manager, pulp and paper mill division, Sprout, Waldron & Co., who said that an important advantage of the semi-chemical pulping processes is their flexibility in regard to pulp quality.

"This flexibility," said Mr. Converse, "has been important in extending the field of usefulness of semi-chemical pulp to grades for which it could not have been considered a few years ago."

Mr. Converse said that it is the modern, precision pulp refiner which gives flexibility to the mechanical pulping stage. "The new uses developing for unbleached semi-chemical pulp in high grade paper and board grades present attractive opportunity for the profitable utilization of hardwood species," he said. "It appears entirely possible that coniferous acid sulfite pulp, pressed on the one side by bleached sulfate and on the other by bleached neutral sulfite semi-chemical pulp, may become primarily a chemical converting pulp rather than a papermaking material.

"Rather than to ask in what grades hardwood neutral sulfite semi-chemical pulp is useful we may better ask: In what grades is it not useful? Such grades exist, of course, but its field of usefulness is far broader than has been generally realized and the field has not, as yet, been definitely bounded. It is reasonable to predict that the process is on its way to becoming one of the most important processes for manufacturing pulp used in high grade papers and boards."

One of the interesting panel discussions was on high yield sulfite and sulfate, the participants being C. V. Callaghan, Bathurst Power & Paper Co., L. R. Beath, Price Bros. & Co., O. J Walker, Northeastern Paper Products; W K. Voss, the Ontario Paper Co. and Dr. J. S. Hart.



INTERNATIONAL PULPING CONFERENCE at Manoir Richelieu, Murray Bay, Que., drew delegates from several countries late in June. The sessions were followed by the Summer meeting Technical Section, CPPA. Some of those prominent in the Pulping program were: Left to right—JOHAN RICHTER, Aktiebolaget Kamyr, Sweden; DOUGLAS JONES, Engineer-Secretary, Technical Section CPPA; DR. W. GALLAY, the E. B. Eddy Co., General Chairman of the conference; HORACE SEARS, Price Bros. & Co.; HOWARD C. LEE, Canadian International Paper Co., Chairman, Technical Section CPPA; DR. JOE EDWARDS, Vice President, Price Bros. & Co.

K. G. Booth read a paper prepared by W. F. Holzer and K. G. Booth of Crown Zellerbach Corp. on reactions in the kraft process. The ammonia base process was dealt with by J. C. Benny of Diamond Match Co., who gave as some of its advantages the decreased cooking time and higher strength of pulp, reduced sulfur consumption and increased pulp production amounting to about 20 percent, based on a month's trial operation. Mr. Benny claimed there was better circulation of liquor in the digester with the ammonia base process and faster bleaching with less chemicals.

Continuous Digester

Johan Richter, of Aktiebolaget Kamyr, Sweden, spoke on continuous cooking of kraft pulp in a sectionalized vertical digester and reported that in a commercial scale operation at a Swedish mill where continuous cooking produces the same quality as batch cooking. A sulfite pilot size digester also is in Sweden. A contributory factor was that some of the pulpwood was pre-treated before grinding.

Leading the Swedish delegation was Dr. Tydenof Swedish Cellulose AB, accompanied by Dr. B. Iversson and Dr. S. Alm. Dr. W. Brecht, of the Institute of Paper Making, Germany, was unable to attend the sessions, but his paper was read by Dr. Gallay. Its subject was size and form distribution of fractions as they affect the physical properties of mechanical pulp. Dr. Joe Edwards of Price Bros. & Co. outlined some of the problems encountered in manufacture of mechanical pulp.

J. R. W. Grieve, Brown Corp., La Tuque, spoke on variables in sulfate pulping, and F. W. O'Neil, of the New York state college of forestry, led the discussion of chemical treatments of mechanical pulp.

An honorary life membership for Elliott M. Little, president of Anglo-Canadian Pulp & Paper Mills, was a Technical Section event. In his speech of acceptance he predicted enormous expansion of pulp and paper markets during the coming quarter century.

Subjects of the papers covered a wide range, as usual. P. N. Bowle-Evans, of Canadian International Paper Co., told about self-sluicing blow pits that had been developed by his company, and C. R. Tittemore, Gaspesia Sulphite Co., dealt with application of the Oliver vacuum cylinder to sulfite pulp drying.

J. S. Detwiler, Taylor Instrument Cos., discussed graphic panels, and among items of equipment described in papers were the Dorr fluosolids pyrites reactor at the Brown Co.'s Berlin mill.

First Private Tree Farm In British Columbia

British Columbia's first company-owned tree farm was recently dedicated on Vancouver Island by Chief Justice, GORDON SLOAN, author of the Sloan report on the province's timber resources.

Named Beaufort Tree Farm after the range of hills which it partly covers north of Qualicum, the area consists of about 25,000 acres, 16% of which is mature timber, the balance being new growth or in process of replanting. A considerable area may be re-seeded by helicopter.

The tree farm is owned by MacMillan & Bloedel, whose president is B. M. HOFFMEISTER. Chief Forester is ANGUS MacBEAN.

The tree farm movement in British Columbia was given its first impetus by legislation passed last year providing for special tax concessions.

Recognition For Brown

For the second consecutive year, Freedoms Foundation, Inc., Valley Forge, Pa., has honored Brown Co.'s publication, *Brown Bulletin*, for "outstanding achievement in bringing about a better understanding of the American Way of Life." The award was to James P. Hinchey, Brown editor, at a ceremony at University of New Hampshire.

WRENN PAPER COMPANY

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SHEAR-CUT SLITTER-REWINDER

The Wrenn Paper Company, widely recognized for its high quality products, was faced with the problem of slitting a hard-to-handle material. Clean, square edges and uniformly wound rolls were of utmost importance.

After considering several machines, the Bagley & Sewall #15 Shear-Cut Slitter-Rewinder was selected.

B & S Slitters and Rewinders are doing outstanding jobs in mills and converting plants all over the country. Their many unique money-saving advantages make them the first choice of the industry. Before you buy, *compare*...and your choice, too, will be B & S Slitting and Rewinding equipment.

For full details write to The Bagley & Sewall Company, Watertown, New York.

Inserts show Shear-Cut Slitter Units

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designers and builders of **PAPERMAKING MACHINERY**

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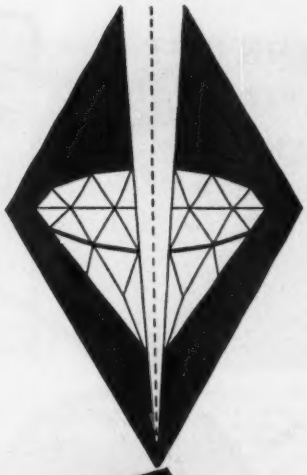
This time-tested rotary shear method of slitting has been improved and is part of all recent Langston Slitters. Practically all Langston machines now in service can be readily equipped with it.

Set-up is quickly and easily made—the front frictionally driven slitters can be instantly disengaged for thread-up, as shown below.

The front slitter angle is fixed and tamper proof—a simple adjustment compensates for reduced slitter diameter resulting from grinding.

With a Langston Slitter & Winder you are sure of absolutely clean cut, uniform slitting and "gem quality" finished rolls. Ask for Bulletin #204 containing further details.



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CAMDEN, N. J.

LOADING LIQUID CHLORINE . . . one of many careful operations that preserve the high purity of chlorine from the efficient Hooker Type "S" Cells, at Niagara Falls and Tacoma, to your plant.

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basic source for PULP and PAPER *chemicals*

More than 50 large U. S. pulp and paper producers specify Hooker Chemicals for their processing requirements, such as chlorination and bleaching of pulp, caustic extraction, and de-inking of paper scrap.

These heavy users of chemicals find that Hooker purity and shipment-to-shipment uniformity are valuable aids in processing and in controlling uniformity of the finished product.

Whatever *your* needs for chlorine, caustic soda, or their many derivatives, you will like the way Hooker works to ease your supply problems. As fast as stocks are ready, they are shipped to you on dependable schedules, carefully point-checked to insure delivery when promised.

Production of Hooker Chemicals is at an all-time peak, and facilities are being expanded to meet new demands as promptly as possible. For up-to-date delivery information, please keep in touch with your Hooker sales representative.

- Caustic Soda
- Chlorine
- Muriatic Acid
- Sodium Sulfide
- Sodium Sulfhydrate

FOR COMPLETE LIST

of Hooker Chemicals, send for Bulletin 100, which describes properties, typical uses, and shipping containers. Please write on your business letterhead.

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Great Northern Plans For More Newsprint

The Defense Production Administration has granted a certificate of necessity to Great Northern Paper Co. in the amount of $30,000,000 for construction of newsprint facilities at East Millinocket, Me.—one of the largest single authorized expenditures to be granted to any industry in the past few months.

Roy V. Weldon, vice president in charge of engineering and research for Great Northern, has told PULP AND PAPER:

"This certificate covers the installation of two new high-speed modern news machines at our East Millinocket mill capable of producing 400 tons of newsprint daily, and also included is sufficient expansion of other facilities to support this production. This program is in line with the company's policy to maintain and expand its position in the newsprint field, the fulfillment of which, of course, depends upon future decisions of the board of directors."

Some of the original press announcements on this certification said that the Great Northern expansion would add 124,000 tons of newsprint and 141,000 tons of paper pulp to the nation's annual production capacity. There has been no confirmation from company officials, however, that the new facilities are to produce anything but newsprint.

California Construction

American Potash & Chemical Corp. will start construction of a research laboratory in Whittier, California, adjacent to Los Angeles, in July, Peter Colefax, president announced.

The new facility, to cost $300,000, is designed and will be built by Austin Co., to be completed in 1953. The new unit supplements the laboratory and pilot plant at the company's principal operations at Trona.

Finnish Mill Planned

Enso-Gutzeit Co. of Helsinki, Finland, has announced plans to build a newsprint mill at Tainionkoski, Finland. Capacity of the mill, if built, it is said will be 100,000 metric tons.

Late in 1950, Enso-Gutzeit began operating a kraft liner mill at Kaukotoa with a 192 in. Beloit machine, in connection with a sulfate mill there. The new mill will be in the same general area.

Chillicothe Adding Four New Big Digesters

The Mead Corp.'s annual report states that four new large digesters are being installed this year at their mill in Chillicothe, O., and this equipment will permit this mill to use large stands of oak wood from Southeastern Ohio for the first time in its history.

Chillicothe Division is Mead's "parent" mill. It has 11 Fourdriniers, making over 500 tons a day of machine-coated magazine, bond, catalog and other papers; two soda pulp mills—one with four vertical digesters and one with five tumbling type, and a de-inking plant.

A major portion of $3,300,000 spent last year was building up soda pulping, New power and chemical recovery units are now in place.

Expenditures at the Kingsport, Tenn., Division totalled over $2,000,000 in 1951. As in Chillicothe, the principal projects included the installation of power plant and electrical distribution equipment as well as chemical production and soda pulp-washing facilities. Also changes made in one of the paper machines enabled this machine to increase its tonnage so substantially that production of the entire plant was approximately 7% higher. During 1952 the enlargement of the pulp plant will be continued and many changes designed to improve the mechanical handling and preparation of the wood will take place.

Equipment of the District of Columbia Paper Co., which discontinued operations, last year, was moved to the Mead Wheelwright Division at Leominster, Mass., where grades formerly made in Washington, D. C., are now being manufactured.

Pascoe-Rowland Wedding Is A Wisconsin Event

More paper executives and families than have attended any wedding in a long time in the Wisconsin Valley were present at the July 5 wedding of Barbara Pascoe and Jerry Rowland, guests being from Wisconsin Rapids, Nekoosa and Port Edwards. The bride is oldest of three daughters of Truman Pascoe, technical director of Nekoosa-Edwards Paper Co., and the groom is youngest of three sons of Delbert G. Rowland, sales manager of the plastics division of Consolidated Water Power & Paper Co.

Handling Special Liquor

The recently completed 19-acre lagoon for impounding spent sulfite liquor from Crown Zellerbach Corp.'s mill at West Linn, Ore., was cut into operation July 1. Spent liquor drained from blowpits, along with strong wash water, is pumped 4600 ft. to the lagoon where it will be impounded until released during high-water periods. No spent liquor will be released during July, August, September, October, or other low-water periods.

The basin, according to Resident Manager Malcolm Otis, has 88 million gallon capacity, which is considerably more than adequate for containing spent liquor resulting from four months production.

Liquor from blowpit drains into tanks is pumped from there through 8 in. stainless steel piping to the lagoon by a Worthington centrifugal pump rated at 600 g.p.m. at 130 ft. head and powered by 40 h.p. motor.

Due to special treatment of bottom of the lagoon and dikes, seepage is expected to be slight, according to John Moak, plant engineer. Compaction was engineered in layers after exhaustive soil surveys and analyses. Riprap protects lagoon from erosion at intake point.

An outlet at south end permits draining of the lagoon when river is in flood stage, at which time the resultant change in oxygen content will be inconsequential.

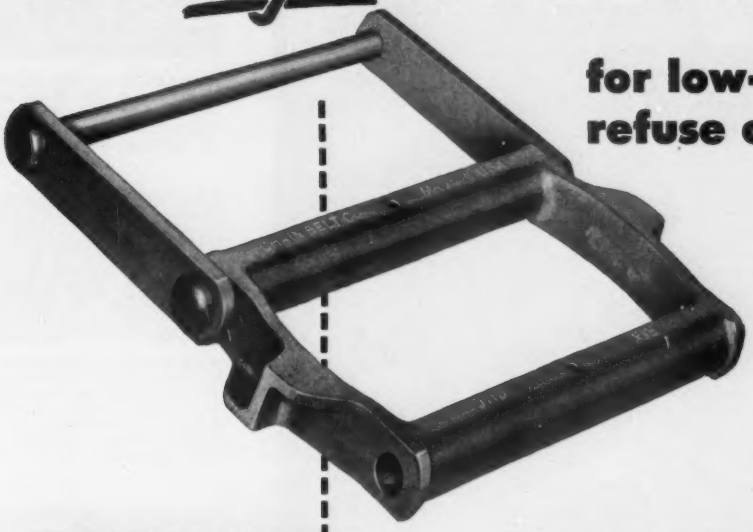
This is the second and largest summertime diversion impoundment for spent sulfite pulp liquor in the Willamette Valley. Oregon Pulp & Paper Co. installed a similar lagooning system about two years ago.

Spaulding Pulp & Paper Co., at Newberg, also impounds spent sulfite liquor in newly constructed lagoon. This organization started discharging liquor to the lagoon at resumption of production in mid July following 2-week shutdown.

Publishers' Paper Co., Oregon City, gets rid of most of its spent liquor by giving it to counties and private haulers in this part of the state for application on roads as binding agent. Carl E. Braun, vice president and mill manager said, "At times we are unable to supply enough to meet demand." Use of spent liquor from this plant for road binder started in 1936-37 when applied to private logging roads.

The Right Combination

for low-cost refuse conveying



Side view, notice the heavy wearing shoes on the edges of the side bars of the *invertible* block link; and the shoe reinforcement, or rib, which also serves to move material. Barrels contain large grease chamber. There is added metal behind the rivet which lengthens chain life.

For a better job of conveying sawdust, refuse, wood chips and similar material, Rex® has developed the new Combination-Type Mill Conveyor Chain No. 6110. It is the ultimate in H-type conveyor chain . . . far superior to the ordinary H-type chain which it is designed to replace.

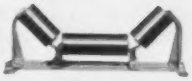
Block links of malleable iron or Rex Z-Metal, and side bars of high carbon steel give this chain the toughness to stand up under long, hard, continuous service. Rivets are specially made to reduce possibility of breakage resulting from momentary overload and corrosion fatigue.

Here's a chain that is sure to slash overall refuse handling costs. It can be run over the same sprockets as ordinary H-type chain. Your Rex Field Sales Engineer is anxious to give you the complete story. Call him today, or if you prefer, write to Chain Belt Company, 4691 W. Greenfield Ave., Milwaukee 1, Wis.

OTHER POPULAR REX MILL EQUIPMENT

Rex H-Type Drive Chain

Rex Chabelco® Chain



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One for every place— one place to get them all

PROBLEM—In every industry, designers and production engineers are constantly confronted with the problem of combating friction. Every turning part of machinery presents problems of speeds and loads—sometimes radial, sometimes thrust loads—usually both.

SOLUTION—Depend on SKF ball and roller bearings and pillow blocks to combat wasteful friction. SKF engineers can help you put the right bearing in the right place.

RESULT—Your equipment will improve in performance. SKF's wide range of bearing types and sizes, plus engineering know-how, makes it possible to select that type with those characteristics which make it the best choice for your particular application.

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SERIES SES and SY—Unit ball bearing pillow blocks. The SES is mounted in rubber, prevents transmission of noise. The SY permits liberal misalignment—is effectively sealed by famous SKF Red Seal.

SERIES SUS and SUA—Unit ball bearing pillow blocks (SUAR equipped with spherical roller bearings). Ring seals exclude dirt. The SUA is an adapter-type mounting.

SERIES FUS and FUA—Ball bearing flanged unit having same features as SUS and SUA pillow blocks. (FUAR equipped with spherical roller bearings).

SERIES SDAF—Exceptionally sturdy construction for unusual shock and heavy thrust loads. Equipped with Triple-Seal rings for bearing protection.

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EQUIPMENT AND SUPPLY COMPANIES

Appleton Machine Takes Over Cowan Equipment

The Appleton Machine Co. of Appleton, Wis. manufacturers of pulp and paper mill machinery, are licensed by Hydraulic Machiner Co., Ltd., of Montreal, to sell and manufacture the Hy Mac Cowan decker in the United States, it is announced by R. M. Radsch, vice-president-sales, of Appleton Machine Co.

That company will also handle the Cowan centrifugal pulp screen, in all states not bordering on the Atlantic Seaboard, which territory will continue to be covered both as to sales and manufacture, by the Montague Machine Co., Turners Falls, Mass. Cowan equipment has been extensively applied in Canadian Mills.

Forest Yield Tax Report

A 52-page report entitled "Forest Yield Taxes" based on studies of the U. S. Forest Service, has been issued by the U. S. Department of Agriculture. The report describes the forest yield tax, now in effect in 14 states, as opposed to the general property tax commonly in effect. The yield tax system is intended to encourage utilization and perpetuation of forest supply. Copies of the report may be obtained from the Superintendent of Documents, Washington 25, D.C. at 20 cents per copy.

Reliance Offers New Motor Device

An electronic motor-drive accessory that provides timed-rate acceleration and deceleration is described in a new, two-page bulletin by Reliance Electric & Engineering Co., Cleveland, O. It explains four specialized functions of VSC: (1) timed-rate acceleration and deceleration and speed-changing, (2) pre-set speed selection, (3) automatic speed-changing and (4) improved speed regulation for adjustable-voltage drives.

The VSC is especially designed to operate with Reliance V*S Adjustable-Speed Drive. For this bulletin, write Reliance Electric & Engineering Co., 1111 Ivanhoe Road, Cleveland, O., and ask for Bulletin K-2025.

Hooker Completes Loan for Expansion

Hooker Electrochemical Co., Niagara Falls, New York, producers of chlorine, caustic soda and diversified chlorinated organic chemicals, has completed negotiations for a 25 year term loan in the amount of $20,000,000.

It has used $6,000,000 of the new funds to retire its outstanding bank loans and will use the balance of the funds for various plant enlargements and improvements both at Niagara Falls and at Tacoma, Wash. and for a new plant to be erected at Montague, Mich.

R. M. RADSCH, Sales Vice-president of Appleton Machine, who announces new Cowan line of Equipment for U. S.

CHARLES EBEM WILSON, sales vice president of Worthington Pump and Machinery Corp., Harrison, N.J., has been appointed a West Coast consultant on sales problems according to H. C. Ramsey, president of Worthington. In 1946 Mr. Wilson, in addition to other duties, was made president of the Worthington-Gamon Meter Corp., then a subsidiary. He became the third Charles E. Wilson to be a corporation president. Others were Charles Erwin Wilson of General Motors and Charles Edward Wilson of General Electric. The latter is now director of the Office of Defense Mobilization.

New DuPont Pigments Manager in West

Dr. Jack B. Callaway has been appointed manager of west coast sales for the Pigments Department of the DuPont Co. His headquarters are in Pasadena, Calif. He succeeds Robert P. Enslin, who died last year.

M. James McLain, formerly a pigments salesman at Cleveland for the central area, succeeds Dr. Callaway as sales promotion manager for dry colors in the Wilmington headquarters of the company. Leland F. Andrews succeeds Mr. McLain, with headquarters in Cincinnati.

Born Mar. 4, 1910 in Jasper County, Indiana and Illinois. He was graduated Indiana and Illinois. He was graduaed from the University of Cincinnati in 1932. His M.S. thesis was on the effect of hard water salts on rosin sizing of paper. He received his doctorate there in 1936. He worked summers in the old Mead mill in Dayton, O., but joined DuPont in 1936 as a research chemist on dry colors at the Newark, N.J. plant. He became a division head in 1948 and promotion manager for dry colors in 1949.

Allis Chalmers Has New Pump Bulletin

Construction features of Allis-Chalmers-process pumps for handling corrosive and abrasive liquors are described in a new bulletin. "Allis-Chalmers Process Pumps," 08B66-15B, available on request from Allis Chalmers Mfg. Co., 995 S. 70th St., Milwaukee, Wis.

New Parchment Machine For KVP in Canada

The KVP Co., whose Kraft mill at Espanola, Ont., operates as a subsidiary of Kalamazoo Vegetable Parchment Co., started producing parchment for the first time early this year, and with excellent results. A portion of the 275-ton daily capacity of the mill has been allotted to pulp suitable for waterleaf, which is being made on one of the mill's two paper machines.

The parchment machine is a Pusey & Jones unit, and it is being housed in a new reinforced concrete building, where there is space to accommodate a second machine if required. Driers have an 86 inch face and will produce a sheet 76 inches wide.

The machine is driven by a Louis-Allis variable speed A.C. motor. Auxiliary equipment includes a Swenson (Whiting Ltd.) acid evaporator, the first of its kind to be built in Canada.

Conversion and sale of the KVP vegetable parchment is by Appleford Paper Products, Ltd., Hamilton, Ont., acquired by KVP Co. in 1945 and recently moved into a new plant. Appleford is Canada's largest producer of household waxed papers and makes a wide line of food protective papers.

Homer Ralph is superintendent of the new parchment plant, at Appleford; Fred Inglis is parchment sales manager.

Hercules Officials

Anson B. Nixon has been elected vice chairman of the board of directors of Hercules Powder Co. A vice president since 1940, and a member of the board since 1932, Mr. Nixon takes the new post following retirement of Leavitt N. Bent.

Ross Engineering Opens Two New Offices

Two new offices for Ross Engineering Corp., and Ross Engineering of Canada, Ltd., engineers and manufacturers of air systems for mills, have been opened in two important industry areas—one on the Pacific Coast and the other in Ontario.

Kenneth Jones, who worked out of the New York office for over ten years covering New York and adjacent areas, has moved with his wife and two children to Seattle and will head a new office at 823 Skinner Bldg. He is a Pratt Institute graduate. Will Hateau has gone to Seattle, too, as draftsman and assistant.

Gordon Chalmers has opened the office at Port Arthur, Ont., and will be its manager. He has been with the Canadian firm in Montreal for some years.

WM. F. LANE, who died Mar. 22, was vice president and general manager of the northern California division for Fiberglas Engineering & Supply Co., subsidiary of Owens-Corning Fiberglas Co.

Ammonia Recovery And Use in Fertilizer

How a recovery of ammonia from ammonia base sulfite pulp waste liquor was accomplished was reported by James Ayer and Edgar Stoddard of University of Maine at its Pulp and Paper Foundation Research Day. They said:

"The recovery was accomplished by the evaporation of a mixture of kraft and ammonia base sulfite waste liquors. Three different ratios of kraft to sulfite liquor have been examined and virtually 100 per cent ammonia recovery has been found possible. The effects of pH of liquor within the evaporator and time of contact of liquor with the heat transfer area have been investigated. Complete separation of the effects of these variables has not been attained. Within limits, however, lowering of pH, or time of contact, results in a smaller percentage of ammonia recovery. In all cases, pH's above 12 and contact times greater than five minutes allow nearly complete ammonia recovery from feed mixtures in the three ratios studied.

"The product ammonia has been collected in standard hydrochloric acid as a water solution of ammonium chloride. Concentration of these solutions with respect to ammonia has been as high as one per cent. The strength of these solutions is favored by lower time of contact and fraction of feed evaporated.

"In general, the authors believe the two to one ratio to be superior to the other two. Mixture in this ratio yields the alkalinity required for the initial release of ammonia, permits operation at low contact times, produces an ammonia solution of higher concentration and allows superior percentage ammonia recoveries."

Another Maine Research Day report was on the utilization of bark and ammonia-base sulfite waste liquor as fertilizer, by Frank A. Butler and Dwight D. Frye. They said:

"An attempt was made to determine the feasibility of combining two waste materials—bark and ammonia-base sulfite waste liquor—into a useful product. The original intention was to form from the liquor-impregnated bark a crude sheet which could be marketed in rolls and laid out on the ground to (1) hold moisture in the soil, (2) prevent the growth of weeds, and (3) decompose, furnishing nitrogen and other organic and inorganic matter to the soil.

"The ammonia-base sulfite liquor was obtained from The Eastern Corp., South Brewer, Maine; and the bark, a mixture of hemlock, fir, and spruce, was furnished by St. Regis Paper Co., Bucksport, Maine. A laboratory attrition mill, manufactured by Bauer Bros. Co., Springfield, O., was used for grinding.

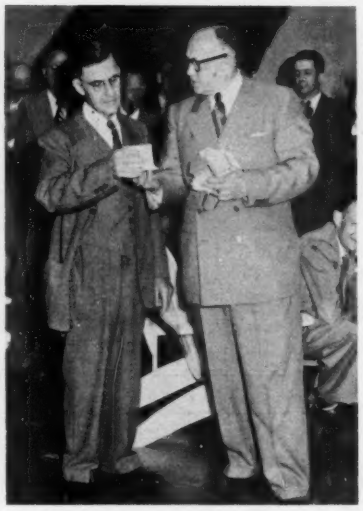
"Preliminary experimentation with the attrition mill showed that a sheet could be formed from bark ground with water at plate clearances varying from 0.001" to 0.025", best results being obtained at a clearance of 0.001".

"Further work was done at a plate clearance of 0.001" and with the bark dispersed in waste liquor prior to grinding. Four runs were made using 250 grams of pressed bark and varying volumes of liquor. The following results were obtained:

Run Number	*1*	*2*	*3*	*4*
Liters of Liquor Used	3	6	9	12
Percent Available Ammonia Retained	3.48%	6.09%	4.35%	2.90%
lbs. Ammonia Retained per ton of Pressed Bark	2.88	10.08	10.80	9.60

"From graphical projections of these results, the optimum operating range appears to be in the vicinity of a volume of from six to nine liters of 11% liquor per 250 grams of pressed bark.

"Low mechanical retention and excessive foaming of the liquor due to grinding made it apparent, on the basis of this work, that the bark should be ground with water rather than with liquor. If the process of combining the bark and liquor is to become commercially practicable, some method of spraying the liquor onto a partially dried bark sheet should be investigated."



AUSTIN NICKELS, General Superintendent of Publishers' Paper Co., retires after 42 years service. Here he receives from CARL E. BRAUN, Vice President and Mill Manager, engraved wrist watch presented by officers and supervisors.

Austin Nickels retires

Retirement of Austin Nickels, general superintendent, following 42 years service with Hawley Pulp & Paper Co. and its successor, Publishers' Paper Co., Oregon City, Ore., has been announced by Carl E. Braun, vice president and mill manager. "Nick" was feted at a party, attended by 65 employes and friends, at Mr. Braun's elaborate partyroom aboard famous H.M.S. Hippy-Dip which reportedly is "still fast in the mudflat." Officers and supervisors presented the guest of honor with an engraved wrist watch, mill employes gave him an engraved chime, electric mantlepiece clock, and office workers presented him with an awning-topped lawn swing to occupy the leisure hours.

B.C. Market Outlook

Market slump combined with shrinking log inventory at some mills as a result of an industry-wide labor strike in the coastal woods brought decline in British Columbia pulp production this summer, although a slight improvement in demand was noted early in July.

Port Mellon mill of Howe Sound Pulp Co. suspended operations because of lack of chips from the associated Canadian Forest Products mill, shut down by strike. The Woodfibre mill of Alaska Pine & Cellulose was down six weeks for overhaul and because of a falling off in demand, but returned to production July 1.

Newsprint mills maintained production, and one of the largest operators, Powell River Co., reported log inventory higher than for many years owing to favorable logging conditions early in the year. More than 30,000 men were directly affected by the labor strike.

Third quarter prices for pulp in Canada were expected to move lower, following a trend towards reduced demand established some time ago in the textile field. Improvement in Canadian pulp sales to Europe has failed to offset the decline in the U.S. market. Production of most grades was down in Canada during May.

Summarizing his view of the market, H. R. MacMillan, chairman of the board, MacMillan & Bloedel, Vancouver, operators of kraft (both bleached and unbleached) mills at Port Alberni and Harmac, Vancouver Island, says:

"The spot market which brought high prices for pulp six months ago doesn't exist now. In six months, the price of unbleached pulp has dropped $65 a ton and bleached $48 a ton at the mill. The result is that most of the pulp mills in British Columbia which have to sell to mills in the U.S. have shut down part or all of the time during the past six weeks.

"Customarily quite a bit of pulp goes from British Columbia to the United Kingdom. The U.K. converting mills are so loaded with pulp now that a number of important ones could run for three months without replenishing."

Mr. MacMillan returned from a business trip to Britain late in June.

Hooker Research

Hooker Electrochemical Co. is sponsoring a research fellowship in chemical engineering at the University of Washington, Seattle. While no specific assignment has been made, the research will be concerned with uses of caustic soda and chlorine as related to use of waste products of the pulp industry such as lignin.

Joint Southern Meeting Will Be At Roanoke

Southern and Southeastern Divisions of the Superintendents Association are to meet in joint session Oct. 8-10 at the Hotel Roanoke, Roanoke, Virginia.

Cecil B. Curry, National Container Corp. of Virginia, Big Island, Va. is chairman of the Southeastern Division; J. J. Thompson, Southland Paper Mills, Lufkin, Tex., of the Southern.

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Personals

MIDDLE WEST NOTES

DON KNIGHT, Bulkley-Dunton representative in Midwest out of Kalamazoo, and Mrs. Knight welcomed another addition to their young family—a son, John, born in mid June. He has a little older sister.

HENRY RASCH, chief accountant of Hoberg Paper Mills, is the president of the Northern Wisconsin chapter of N.A.C.A.

FRANK EILERS, a director of Sutherland Paper Co., and Midwest sales representative for Eastwood-Nealley and Orr, was due to become a great-grandfather in July. And, of course, his wife, Helen, a great-grandmama. Grandson, *FRANK EILERS FIELD*, in the laboratory in Sutherland, and his wife, were the expecting parents.

GERTRUDE McMAHON, former secretary to Westbrook Steele, president of the Institute of Paper Chemistry, was married July 12 to Lieut. Pat O'Malley, of Rhinelander, Wis., serving in the U. S. Air Force in Europe. They were heading for Europe after the wedding; to be stationed in either France or Germany. The former Miss McMahon is daughter of Mike and Mary McMahon of Appleton (he being representative of Appleton Woolen Mills and Cabble Wires). As a boy, Lieut. O'Malley caddied for many a paper industry golfer on the Rhinelander course.

WESTBROOK STEELE, president of the Institute, spent the 4th holidays at his Brattleboro, Vermont, home.

S. ROY TURNER, former mill manager at Sheboygan, Wis., and former engineer with Combined Locks and Central Paper Cos., has gone to India to be engineer and ultimately manager of the new newsprint mill being built about 60 miles from Bombay.

GEORGE W. MEAD, retired president of Consolidated Water Power & Paper Co., who has shown a remarkable recovery from a heart affiiction in the past year, was back in Wisconsin Rapids in July from Florida, where he has been convalescing.

TOM ZENTNER, youngest member of the graduating class at the Institute of Paper Chemistry, was top man in his class, also winning the Steele Award for 1952. Then he went to Middletown, O., to join Gardner Board & Carton Co.

K. S. HALEY, Stebbins Engineering, Watertown, N.Y., spent some time recently in the Lake States on work assignments.

DON MORRIS, executive v. p. of The Mead Corp., Chillicothe, O., returned from a Pacific Coast tour which took him as far as the Powell River mill in British Columbia.

BILL GEIGER'S (Weyerhaeuser pulp sales, Chicago) nephew, Chuck, graduated from the pulp and paper curriculum at Western Michigan, Kalamazoo, and went west to work in the industry on the Pacific Coast.

MAYNARD J. CUSACK, longtime representative of Riegel Corp., in Chicago, has joined Shawano Paper Mills as vice president and has moved to DePere, Wis.

CHARLES N. EGAN is president of this company which has a paper mill at Shawano and pulp mill at Little Rapids.

JERRY FALLON, known in Midwest and other areas as an engineer with Ross Engineering, out of the Chicago office, will graduate next February from law school at Northwestern U. He specialized in patent laws. Is going to school this summer, working part of time with Ross.

EARL McCOURT, *GEORGE SAWYER* and *BOB MADER* of Consolidated Water Power & Paper and *BENTON CANCELL* of Rhinelander Paper recently crossed paths in Port Arthur, Ont., and had the pleasure of a surprise get-together.

FRED SCHEUPPERT, traffic manager of Rhinelander Paper Co., was general chairman of a Wisconsin Valley Traffic Club outing at Rhinelander Country Club.

FOSTER DOANE, new production manager of Bergstrom Paper Mills, has bought a home on Lake Winnebago at Neenah, formerly a Gilbert family residence, and was moving his family into it at conclusion of school from their former residence in Hudson Falls, N.Y.

C. E. TRELEVIN, shipping superintendent of Nekoosa-Edwards Paper Co., has a son, Charles, who is city editor of the Philadelphia Call-Bulletin.

GEORGE MEAD, grandson of the retired president of Consolidated Water Power & Paper, is working in the sulfite mill at Wisconsin Rapids after completing his courses at the Institute of Paper Chemistry.

PRES. E. H. JENNINGS, of Thilmany, back from Europe.

Pres. Jennings of Thilmany Comments on Europe

E. H. Jennings, president of Thilmany Pulp & Paper Co., Kaukauna, Wis., returning in mid-June from a tour of Europe with Mrs. Jennings, had this to say about what he saw:

Germany—"Strong industrial recovery—one could feel the upsurge of industry."

Italy—"Saved from Communism through the Marshall plan, at least for the present. Industry and transportation especially improved by U. S. aid."

France—"Its heart taken out by the German occupation, and still suffering effects of the first war, is making some progress. Its currency strengthened."

Britain—"An atmosphere of stability, despite lack of raw materials and exchange for imports. There is little incentive for good performance in the socialized industries."

Austria—"Every banner in May Day parade attacked U. S. but there was no disturbance."

Mr. Jennings said it would cost 60% less to supply Europe with military equipment, instead of maintaining American divisions there. Though aid "should not be permanent, there is need for further military and industrial assistance," he said.

STANLEY BALDWIN of Consolidated Water Power & Paper and his wife, *EMILY*, daughter of *G. W. MEAD*, planned a busy week at the Republican convention in Chicago last month, both being active in party work in their state. *TALBOT PETERSON*, of Valley Iron Works and young Republican leader in Fox Valley, was another from this and associated industries in Wisconsin, who was taking part in the Chicago event.

W. L. GILLMAN, veteran sales chief in Chicago for Brown Co., is the last survivor of the men who built La Tuque, as the first kraft mill in America. He was paymaster on that job, then stayed on in operations. He founded the community house and other establishments at La Tuque.

Personals

CANADIAN NOTES

LEO C. KELLEY has resigned as general superintendent of Alaska Pine & Cellulose Ltd., and plans to spend the summer in relaxation. He suffered a broken arm recently and has been taking life a little easier since then, although he plans to get back into harness soon. Mr. Kelley was with several eastern companies before heading west in 1936 to become superintendent at the Woodfibre mill of B. C. Pulp & Paper Co., later absorbed by Alaska Pine & Cellulose. He spent most of his earlier career with Fraser companies, although he was in New York with the Mead Corp. before going to the coast.

THREE PROMOTIONS in the woods division, Ontario-Minnesota Pulp & Paper Co. have been announced by *J. F. MACKELLAR*, vice president and general manager. *GEORGE A. POTTS*, woods manager of the Fort Frances division and for 25 years with the company, has been appointed woods production manager with supervision over the company's four camps. *C. W. ROARK* is the new general superintendent of Kenora woods division and *S. N. GOLDER*, general superintendent of Fort Frances woods division.

LEON KOERNER, president, Alaska Pine & Cellulose, with sulfite pulp mills at Woodfibre and Port Alice, B.C., recently returned from a business trip to Eurpoe. His brother, WALTER KOERNER, managing director of the company, which also operates sawmills, has been touring Australia surveying markets.

Ever since he organized Paper Machinery Ltd. in Montreal, G. L. M. HELLSTROM has been the boss, but the annual meeting recently made it official by naming him president. Canada Iron Foundries holds controlling interest in the firm. Gus Hellstrom first went to Canada in 1916 as consulting engineer for the Ha' Ha! Bay sulfite mill at Port Alfred, Quebec, now owned by Consolidated Paper Corp.

Two veteran eastern Canadian woods managers, J. A. RYAN, of Kenora division, Ontario-Minnesota Paper Co., and J. C. McLEOD, Provincial Paper Ltd., died recently.

VERNON E. JOHNSON, vice-president and general manager, Canadian International Paper Co., and R. L. WELDON, president, Bathurst Power & Paper Co., both of Montreal, were recently honored with degrees of doctor of laws at the University of New Brunswick.

E. L. HOWARD has been appointed manager of Northern Pulpwood, Ltd., logging subsidiary of Pacific Mills, Vancouver, B.C., and *H. P. ELLIS* is assistant manager in charge of planning and engineering, according to announcement by President *PAUL E. COOPER*. *O. D. HALLIN* continues as general manager of the timber department of Pacific Mills, of which he is a vice president.

PROMOTIONS of several members of the staff of Great Lakes Paper Co., Fort William, Ont., were announced recently. *E. A. PATERSON* has been appointed paper mill superintendent; *C. J. JEFFERY* night superintendent in the mill; *A. BARICHELLO*, ground wood superintendent; *A. HEWSON*, assistant groundwood superintendent; *W. G. TAMBLYN* development engineer; *R. A. WHEATLEY*, development superintendent; *RURDO MacKAY*, personnel superintendent, mill.

New Zealander

Joseph A. Craig of Auckland, N.Z., has returned to his home after visiting New York in connection with contracting for construction of Tasman Pulp & Paper Mills, headed by Sir James Fletcher, New Zealand industrialist. Mr. Craig is an executive of one of Sir James' subsidiary companies.

Cowles "Beatapulper" Is Introduced

A new unit that pulps, defibers and refines paper stock all in one operation is being introduced by The Cowles Co., Inc. of Cayuga, N.Y. Known as the Cowles "Beatapulper," it features an action that lends itself to the complete treatment of mixed furnishes. The dispersing action of the impeller, plus beating action of the knives, permit chemical treatment, size, alum and color to be added at any time during the batch cycle.

Personals

NORTHEAST NOTES

WILLIAM S. STUHR, president, United Board & Carton Corp., showed off new offices of his company at 2 Park Ave., NYC, to visitors at the opening, June 16. The office had previously been in Syracuse, where an auxiliary office is still maintained.

LEO V. BODINE, former vice president of Weyerhaeuser Sales Co., has been elected executive vice president of the National Lumber Manufacturers' Ass'n, Washington, D.C. His former affiliations include Clearwater Lumber Co., Potlatch Forests, Inc., and Wood Briquettes, Inc., all of Lewiston, Idaho.

RALPH E. CHAMBERLIN is executive director of the Pennsylvania Forestry Ass'n it is announced by *P. H. GLATFELTER*, association president. Headquarters of the association are to be moved from Philadelphia to Harrisburg, Mr. Glatfelter says.

DONALD G. LYNCH has joined the forestry staff of Brunswick Pulp & Paper Co., Brunswick, Ga. He was formerly district forester at Ripley, W. Va.

More than 150 executives of the pulp and paper and allied industries attended a cocktail party given by the board of directors of Eastern Corp. in honor of *HAROLD HOLDEN*, Eastern's newly-elected president, at Hotel Pierre in New York City, June 26.

C. P. ROBINSON, who has been connected with the industry for most of the years of his life, passed away in his sleep at Mechanicville, N.Y., June 12. Head of his own firm for the past few years, Mr. Robinson had acted as sales representative for such firms as Kidder Press Co.; Hanchett Mfg. Co.; and Heppenstall Co. He was pulp and paper production manager for Cherry River Paper Co. for 10 years, and for 16 years sales manager of the Borregaard Co., Inc.

WILLIAM E. LEVIS, a director of Owens-Illinois Glass Co., has been elected a director of the Robert Gair Co., Inc., replacing *HENRY J. SARGENT*, resigned.

TERRY VANINGEN is a member of the paper sales department of Perkins-Goodwin Co., *LOUIS CALDER*, president, announces. Mr. VanIngen has been a member of Oxford Paper Co. since 1947 until joining Perkins-Goodwin.

S. JAMES AIRES, JR. succeeds *RICHARD W. DALZELL* as manager, commercial research, in the market development department of Lukens Steel Co. Mr. Dalzell is now assistant manager of the department.

HOWARD W. WITT has been transferred from Scott Paper Co.'s Marinette, Wis., plant to serve as personnel manager for the main offices of the company at Chester, Pa., while *GEORGE CLOSSAY*, formerly at Fort Edward, N.Y., takes over as personnel manager at Marinette. *BAKER MIDDLETON* will replace Clossay at Fort Edward.

J. GILBERT MASON, JR., for 35 years a member of Edgar Brothers Co., Metuchen, N.J., and more recently its vice president, has announced his retirement from the company effective last July 1.

JOHN T. WALMSLEY and FREDERICK W. BONACHER, JR., have been transferred by Hooker Electrochemical Co. to its sales coordination office at Niagara Falls, N.Y.; and *JOHN P. EDWARDS* and *CARL I. GOCHENOUR* have been transferred from development and research to the sales department of the company.

CHARLES L. TEBBE is regional forester for U. S. Forest Service with headquarters in Philadelphia, Pa., succeeding *WILLIAM S. SWINGLER*, who is now assistant chief of the Service.

JOHN C. CARRINGTON has been elected a vice president of Freeport Sulphur Co. with office in New York City.

THOMAS REBER STEIN was named resident manager of Rayonier, Inc.'s $25,000,000 purified wood cellulose plant now building at Doctortown, Ga., by *JAMES T. SHEEHY*, Rayonier's vice-president. Mr. Stein was a former resident manager of Minnesota and Ontario Paper Co., and a former assistant manager in charge of engineering and construction for Wood Conversion Co. before joining Rayonier.

EDWARD K. MYLLEN is sales manager of the boxboard division of Robert Gair Co., Inc., moving to that position from the company's New England sales staff.

IRA D. WALLACH has been elected executive vice president of Gottesman & Co., Inc., woodpulp and chemical merchants, and Central National Corp., investment bankers. He also continues as a director of both companies as well as of Rayonier, Inc. Mr. Wallach acted as executive vice-president of Eastern Corp. until his resignation at the time of the election of *HAROLD HOLDEN* to Eastern's presidency. *SAMUEL DAUMAN*, first vice president of Gottesman, has been elected a director of that company.

Heading the new Forest Products Division of Olin Industries, Inc., with headquarters in Shreveport, La., will be *JOHN W. HANES*, vice president; *F. T. WHITED*, resident director; and *ROBERT H. EVANS*, general manager. The new division will be the eighth operating division of Olin, and follows the company's merger with Frost Lumber Industries, Inc. in January 1952. Mr. Hanes is an Olin director and will have responsibility for directing this new division as well as the Ecusta Paper Division and Olin Cellophane Division of the parent company. Mr. Whited is the former president of Frost, and Mr. Evans was former executive assistant to John M. Olin, president of the company.

WANTED

Man with experience on laminating machine to work out new products and get sales for such equipment, preferably on thicknesses from 15 to 125 point inclusive. Write to P&P Box 117, c/o PULP & PAPER, 71 Columbia Street, Seattle 4, Washington.

CELLULOSE EXPORT TO WESTERN GERMANY

Agent having best connections with paper industry of Western Germany desires now or later representation for Western Germany of cellulose manufacturers and exporters. Please write P&P, Box 112, c/o PULP & PAPER, 71 Columbia St., Seattle 4, Washington.

ASSISTANT SUPERINTENDENT —PAPER MILL

Technical graduate with minimum 10 years paper mill experience. Minimum 5 years experience in production supervision. Flooring and Roofing Felt Mill, and building paper specialties. Two single-cylinder machines 160 tons per day. San Francisco Bay Area. Reply with resume. PABCO PRODUCTS INC., Emeryville 8, California.

SALES ENGINEER

Northwest Company manufacturing stainless steel process equipment for pulp mills and other industries. Engineering or pulp mill background preferable. Will require some traveling. Prefer a man already located in Washington or Oregon. Write to P&P Box 114, c/o Pulp & Paper, 71 Columbia St., Seattle 4, Washington, giving complete details as to education, experience, etc. Replies will be held confidential.

EXPORT MANAGER, or assistant, young, sales minded, paper industry experience, presently with converter, good knowledge Spanish, seeks position offering opportunity. Write to P&P Box 119, c/o PULP & PAPER, 71 Columbia St., Seattle 4, Washington.

POSITION OPEN

Graduate chemist or chemical engineer with 2-3 years' experience in paper mill operations desired by large national manufacturer of chemicals for sales service to the paper industry. Write to P&P Box 123, c/o PULP & PAPER, 71 Columbia Street, Seattle 4, Washington.

WANTED

Sales and Planning Engineer who has already worked in the business and has good knowledge of physics and the technique of heating for a sales office of German manufacturer of measuring and regulating devices, if possible with good relations to the Canadian industries. Offers invited. Please reply to: P&P Box 124, c/o PULP & PAPER, 71 Columbia Street, Seattle 4, Washington.

MEN WANTED—POSITIONS OPEN

We can place—Executive vice pres. and gen. mgr. sulphite paper mills; manager specialty mill; asst. to vice pres. and gen. mgr. board and paper mills; night supt. rag content and sulphite papers; asst. mgr. of mfg. large pulp and paper mills; supt. corrugated shipping container plant; supt. kraft specialty papers; supt. Cylinder board mill; asst. supt. Fourdrinier mill; asst. plant supt. converting, printing, packaging and designing.

Chemists and chem. engineers; development engineer on resin materials for surface coating; finishing foreman; printing foreman; master mechanics; plant engineers; recent graduates in chem. and mech. engineering and drafting; beater engineers; color men; machine tenders and back tenders; Cylinder and Fourdrinier mach. foremen for United States, Canada and foreign countries.

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SPECIALISTS IN PLACING AND IN SUPPLYING PULP AND PAPER MILL EXECUTIVES

G. E. Equipment For St. Joe Expansion

Nearly $2½ million of General Electric equipment has been ordered by St. Joe Paper Co. as part of its 850-ton a day expansion at Port St. Joe, Fla. A new 236-inch Pusey & Jones Fourdrinier operating over a 400-to-2000-fpm speed range, with new regenerative tension P.-J. winder will be driven and controlled by G-E equipment. Power demands will be met by two G-E turbine generator sets, 10,000 kw and 12,500 kw.

Personals

WERNER P. GULLANDER, former Seattle manager, General Electric Supply Corp., has been named financial vice president of Weyerhaeuser Timber Co., announces J. P. Weyerhaeuser, Jr., company president. Mr. Gullander succeeds David Graham, for World War II woodpulp allocations official, who resigned the Weyerhaeuser position the first of the year to become financial vice president of Standard Oil Company of Indiana in Chicago. Mr. Gullander, 44, is a veteran of 22 years with General Electric Co. He was born in Grand Rapids, Mich., and was graduated from the University of Minnesota in 1930.

MAX OBERDORFER, president of St. Helens Pulp & Paper Co., St. Helens, Ore., returned home in late July from a month's Western European tour where he visited his brother, *RICHARD O. OBERDORFER*, a manufacturer of Fourdrinier wires at Heidenheim, Germany.

MALCOLM OTIS, resident manager, Crown Zellerbach Corp., West Linn, Ore., attended a week's conference on "selection and development of potential supervisors" conducted in early summer by industrial relations department of California Institute of Technology at Pasadena, Cal.

STANLEY H. BLYTH has been appointed manager of Blake, Moffitt & Towne, Arizona, with headquarters in Phoenix. He succeeds L. C. Calkins who is retiring after 22 years with BMT. Gordon Williams, who has been representing BMT in the Prescott area for some years, has been named sales manager, succeeding Mr. Blyth.

PROF. J. KENNETH PEARCE is now acting technical director of the Washington Institute of Forest Products at Seattle, under the State Forest Products Commission. He succeeds Ralph G. DeMoisy who resigned to accept a position in private industry.

OTTO HARTWIG, of Portland, Ore., general safety supervisor for Crown Zellerbach Corp. for many years and a longtime Pacific Coast leader in safety work, will retire from his company post July 1 under the Crown Zellerbach retirement plan. He plans a consulting service in the Portland area. *VIC GAULT*, named to succeed Mr. Hartwig as general safety supervisor, will keep his home in Camas, Wash., but his offices will be in Portland. Mr. Gault has been in Camas 25 years with Crown, and with the company 35 years. Recently he has been supervisor of industrial and community relations at Camas.

DON J. TENNEY, purchasing agent for Crown Z in Portland, Ore., has been elected president for 1952-1953 of the Oregon Purchasing Agents Assn.

Clinton Foods Inc. Promotes Schwenger

Promotion of W. D. (Don) Schwenger as manager of Clinton Foods' San Francisco office has been announced by H. A. Bendixen, vice president and general sales manager of the Corn Processing Division. Mr. Schwenger will have charge of the sale of Clinton's varied corn products in San Francisco and adjoining territory.

Walter F. Jackson will continue as general sales manager, Western Division, and appointment of Mr. Schwenger will enable Mr. Jackson to devote more time to other territories. West Coast offices are at 1 South Park, San Francisco 7.

VICTOR GRABAR, assistant chemist at St. Regis Paper Co., Tacoma, Wash., has transferred to Los Angeles to assist there in sales service and sales work.

JOSEPH C. COOLY, (left) Container Corporation of America was named chairman of the Paper Makers & Associates of Southern California at the June election meeting. He succeeded William C. Birdsey, Pioneer-Flintkote Company. WALTER P. QUINN, (center) also Container Corporation, was elected vice chairman, while TED MARKOV, (right) Fibreboard Products was named secretary-treasurer. Missing from the activities of election night, was the hitherto annual George M. Cunningham award of $100 for the best paper on some phase of mill operation. No invitations for papers were sent for the 1951-52 year.

Personals

SOUTHERN NOTES

JOE L. RICHARDSON has been named resident manager of Hudson Pulp & Paper Co.'s mill at Palatka, Fla. An "old-timer" in the Southern industry, "Joe" started with the mill in Orange, Texas, in 1911.

GEORGE R. KOONS has been named industrial relations manager for Bowaters Southern Paper Corp. new mill. The company office is located at Calhoun, Tenn. Mr. Koons has been identified previously with Kimberly-Clark organization and from original construction work until recently as industrial relations manager of Coosa River Newsprint Co., Coosa Pines, Ala. His photograph appeared in June issue *PULP & PAPER*.

WILLIAM M. EBERSOLE, who served as pulp mill superintendent of Macon Kraft Co., Macon, Ga., from its early days, was named general superintendent to succeed the late Ronald W. Childers, who had succumbed to heart attack. Taking Mr. Ebersole's place is *JAMES A. WHELAN*, who was a tour foreman, and, in turn, *AUSTIN SEAMAN* was promoted to tour foreman.

JOHN H. HELLWIG, plant manager for Atlanta (Ga.) Paper Co., has been named director of purchases. He is an engineering graduate from Marquette University.

JOHN C. MULHOLLAND has been named sales manager for Crossett Paper Mills, Crossett, Ark.

VERNON D. KNIGHT, Mobile., Ala., has been named southern representative of The Eastwood-Nealley Corporation, Belleville, N. J. He is a graduate of Univ of Alabama and has for many years been administrative assistant of the International Paper Co. Southern Kraft Division at Mobile.

Recent promotions at Union Bag & Paper, Savannah include:

F. S. McCALL, assistant superintendent, Mill Technical Department, to superintendent of Factory Technical Department.

A. S. FARRAGUT, assistant pulp superintendent, to pulp superintendent.

J. L. KNOX, shift foreman, to assistant pulp superintendent.

C. S. EDENFIELD, assistant shift foreman, to shift foreman in pulp mill.

B. A. HARVEY, training operator, to assistant shift foreman in pulp mill.

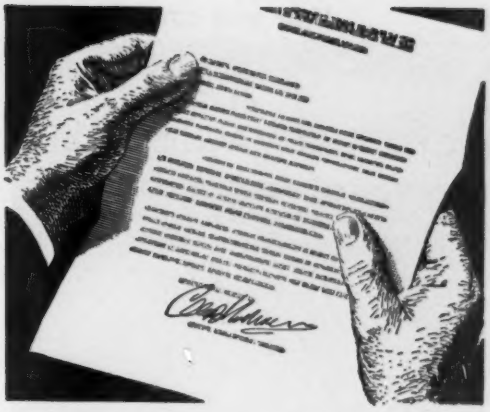
ROY HAYNES, shift foreman, Chemical Recivery area, Champion Paper & Fibre Co., Canton, N.C., raises registered Hereford cattle on a big scale.

CARLTON PEYTON, of the Canton mill accounting department, is one of the most ardent Boy Scout workers in that part of the state.

VINSON WORLEY, bookmill manufacturing machine tender for the Canton mill, was recently elected president of the Canton Saddle & Bridle Club.

WILLIAMSON GLOVER BRASFIELD, JR., who was assistant superintendent of the pulp mill at Union Bag & Paper Corp., Savannah, died Feb. 14 in a hospital after a short illness. He was born in 1909 in Demopolis, Ala. He was an army major in World War II and served in the Battle of the Bulge. His widow, two sons and a daughter survive.

CPL. THOMAS C. HULSEY, who was employed in the chemical laboratory of Sonoco Products Co., Hartsville, S.C., before entering the 2nd Battalion, 32nd "Bucaneer" Infantry Regiment, was awarded the Bronze Star Medal for meritorious service in Korea.



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